PRICEWATERHOUSECOOPERS

Effect of Census 2000 Undercount on Federal Funding to States and Local Areas, 2002-2012

prepared

for

U.S. Census Monitoring Board

March 9, 2000

National Economic Consulting NEC

EFFECT OF CENSUS 2000 UNDERCOUNT ON FEDERAL FUNDING TO STATES AND LOCAL AREAS, 2002-2012

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. From the perspective of jurisdictions that are counted relatively poorly by the census, this translates into fewer services for families in need.

Using information from the 1990 Post-Enumeration Survey (PES) and more recent census estimates, PricewaterhouseCoopers projects Census 2000 will underestimate the actual U.S. population by almost five million individuals, representing an undercount rate of 1.75 percent of the actual population. This estimate is conservative—the Census Bureau itself has projected an undercount rate of 1.9 percent using confidential administrative records and the PES data.

Federal programs with $185 billion of obligations were allocated among the states based on census population counts in fiscal year 1998. Because many of these programs use figures adjusted for the census undercount or have formulae that guarantee states a steady share of the funds, the census undercount would affect only a portion of funding under these programs. This study focuses on eight programs with $113 billion of FY 1998 obligations, representing over 82 percent of the funding of programs affected by the census undercount with obligations over $500 million in FY 1998. Because this study does not consider all programs affected by census population figures, the 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 26 states adversely affected by the undercount to lose $9.1 billion in federal funding over the 2002-2012 fiscal year period. The shift in federal funds due to the Census 2000 undercount is particularly large in metropolitan areas because relatively poorly counted demographic groups are concentrated in urban areas. These areas not only share in state losses from the undercount but also lose funds to other localities within the state because of the high relative undercounts of urban areas. The federal funding loss to the 169 metropolitan areas adversely affected by the undercount is estimated to reach $11.1 billion over the period, or $3,391 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 or Foster Care. For the programs included in this study, the Census 2000 undercount is estimated to reduce *net* federal funds to the states by $722 million over the 2002-2012 period.

EFFECT OF CENSUS 2000 UNDERCOUNT ON FEDERAL FUNDING TO STATES AND LOCAL AREAS, 2002-2012

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EXECUTIVE SUMMARY

A number of federal grant programs rely on population counts from the decennial census for purposes of allocating funds among states. Consequently, a population undercount, such as that estimated to have occurred in the 1990 census, can affect the distribution of federal funds to states and localities that benefit from federal programs. From the perspective of jurisdictions that are counted relatively poorly by the census, this translates into fewer services for families in need.

The Presidential Members of the United States Census Monitoring Board[1] retained PricewaterhouseCoopers LLP (PwC) to conduct an independent estimate of the Census 2000 undercount, and to project its effects on the allocation of federal funds among states, metropolitan areas, and center counties of metropolitan areas over the next decade.

Under the programs analyzed in this report, the District of Columbia and 26 states are estimated to lose $9.1 billion in federal funding over the 2002-2012 period. Metropolitan areas not only share in the state losses but also lose funds to other areas within the state because of the high relative undercounts of urban centers. The federal funding loss in the 169 metropolitan areas adversely affected by the undercount is estimated to reach $11.1 billion over the 2002-2012 period, which translates into a loss of $3,391 per uncounted person in these jurisdictions. Because this report does not include all population-based federal programs or any of the state programs distributed using census data, these estimates should be treated as conservative.

Previous Research

In previous studies, the General Accounting Office (GAO) and the U.S. Conference of Mayors have estimated the impact of the 1990 census undercount on the allocation of federal and state grant program funds.

The GAO study looked at the effect of the 1990 census undercount on funding to state governments under 15 federal formula grant programs in fiscal year 1998.[2] The 1990 census was subject to a net undercount rate of 1.59 percent of the adjusted population. GAO found that the 1990 undercount caused a reallocation of $449 million in federal funding in 1998. This amounts to a funding loss of approximately $145 per uncounted individual in the District of Columbia and the 27 states with funding losses in 1998.

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[1] The Presidential Members of the U.S. Census Monitoring Board are Gilbert F. Casellas (Co-Chairman), Cruz M. Bustamante, Everett M. Ehrlich, and Lorraine A. Green.

[2] For several programs, GAO calculated the state allotments for a different year (1997 or 1999) because certain components of the formulas were not available or more recent data were available. *See* GAO, *Formula Grants: Effects of Adjusted Population Counts on Federal Funding to States*, GAO/HEHS-99-69, February 1999.

According to the Congressional Research Service, federal funding amounting to $185 billion was distributed using census population counts in 1998. GAO analyzed the 25 largest programs (each had FY 1998 obligations of over $500 million) with a combined funding level of $167 billion. Ten of these 25 programs were excluded from the GAO analysis because the data necessary to calculate the effect of the undercount on their allocations were unavailable.

Of the remaining 15 programs, eight programs were responsible for all of the reallocation: (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) Child Care and Development Block Grant[3]; and (8) Vocational Education Basic Grants. The final seven programs were either not affected by the undercount or the effects were insignificant.

The U.S. Conference of Mayors recently surveyed cities regarding the effect of the 1990 census undercount on federal and state funding.[4] The 34 cities responding to the survey reported a loss of federal and state funds of $536 million, or $1,230 per uncounted person, over the ten-year period following the 1990 census. The survey also requested that cities estimate the impact of the Census 2000 undercount. The 20 cities responding to this question reported a loss of federal and state funds of $677 million, or an average of $2,263 per uncounted person, over the ten-year period following Census 2000.

Methodology

This study extends the previous research by estimating the federal funding effect of the Census 2000 undercount over the next decade on states and metropolitan areas. The study includes the same programs analyzed in the GAO report, but estimates the impact of the undercount at the metropolitan level over the entire period affected by the Census 2000 figures.

The eight programs studied accounted for $113 billion in federal grant spending in fiscal year 1998 (see Table A). These programs represented over 82 percent of the funding of grant programs affected by the undercount (for programs with obligations over $500 million). The effect of the undercount on programs with FY 1998 obligations less than $500 million has not been included. 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 federal funds due to the Census 2000 undercount is likely to be larger than is estimated in this report.

[3] Funding under this program is now distributed under the Child Care and Development Fund Discretionary Funds. This report refers to the program by its original name.
[4] U.S. Conference of Mayors, *The Fiscal Impact of the Census Undercount on Cities: A 34-City Survey*, January 1999.

Table A. Federal Formula Grant Programs and FY 1998 Obligations

[Dollar amounts in billions; Programs over $0.5 billion 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.	$100.5
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.	3.5
3. 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.	2.3
4. 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.	2.2
5. 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.	1.4
6. 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.	1.0
7. 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.	1.0
8. 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.	0.7
Total for eight programs included in this report		**$112.6**
Total for grant programs over $0.5 billion affected by undercount		**$136.7**

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

1. Estimate the Census 2000 undercount at the state, metropolitan area, and county level.

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, metropolitan areas, and center counties over the period affected by Census 2000 (generally, fiscal years 2002-2012).

Several key assumptions underlie the results in this report. First, the undercount rates of demographic groups in Census 2000 are assumed to be the same as in the 1990 census; however, the change in the demographic composition of the population between 1990 and 2000 is taken into account based on the latest official Census Bureau projections. Second, current formulae for allocating federal grant programs are assumed to remain unchanged. Third, the national funding level for these programs over the FY 2002-2012 period is based on the Administration's fiscal year 2000 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.

Projected Census 2000 Undercount

Based on the net undercount rates of demographic groups from the 1990 census and the projected population growth since 1990, PricewaterhouseCoopers estimates that the Census 2000 undercount rate will be 1.75 percent of the actual population, or almost five million uncounted individuals. This is a conservative estimate. Using demographic analysis of confidential administrative records to supplement undercount factors from the 1990 Post-Enumeration Survey, the Census Bureau has estimated that the Census 2000 undercount rate will be 1.9 percent of the true population.[5]

Members of minority groups and children experience undercount rates that exceed those for the rest of the population. The net undercount rate for children is estimated to reach 3.36 percent (an estimated 2.5 million children), and the rate for certain minority groups exceeds five percent.

Effect of Census 2000 Undercount on Federal Funding to States

Over the 2002-2012 fiscal year period, for the eight programs analyzed, PricewaterhouseCoopers estimates that the Census 2000 undercount will result in a loss of $9.1 billion in federal funding among the 26 states adversely affected by the

[5] Bureau of the Census, *Report to Congress--The Plan for Census 2000*, August 1997.

undercount and the District of Columbia. Medicaid accounts for the largest shift in federal funds, representing 91 percent of all reallocated funds (see Figure A).[6]

The projected 2000 undercount would have the biggest dollar impact on states with the largest numerical undercount i.e., California, Texas and Florida (see Figure B).

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 $154 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 $219 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 projected to result in a *net* loss of $722 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.

Effect of Census 2000 Undercount on Federal Funding to Metropolitan Areas

The Census 2000 undercount also will affect metropolitan areas that receive a portion of federal grants allotted to states. The net impact on metropolitan 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 metropolitan areas is the sum of the between-state and within-state effects.

Over the 2002-2012 period, 169 metropolitan areas are estimated to lose $11.1 billion, or $3,391 per uncounted person in these jurisdictions, as a result of the Census 2000 undercount. Because metropolitan areas within a state generally experience undercount rates that are higher than the state average, 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.

[6] Because of statutory provisions which 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.

Six metropolitan areas are estimated to lose over $300 million in federal funds: New York, NY; Los Angeles-Long Beach, CA; Houston, TX; Riverside-San Bernardino, CA; San Diego, CA; and Miami, FL (see Figure C). In New York, NY, the funding loss is estimated to exceed $2 billion. 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.

Effect of Census 2000 Undercount on Federal Funding to Center Counties

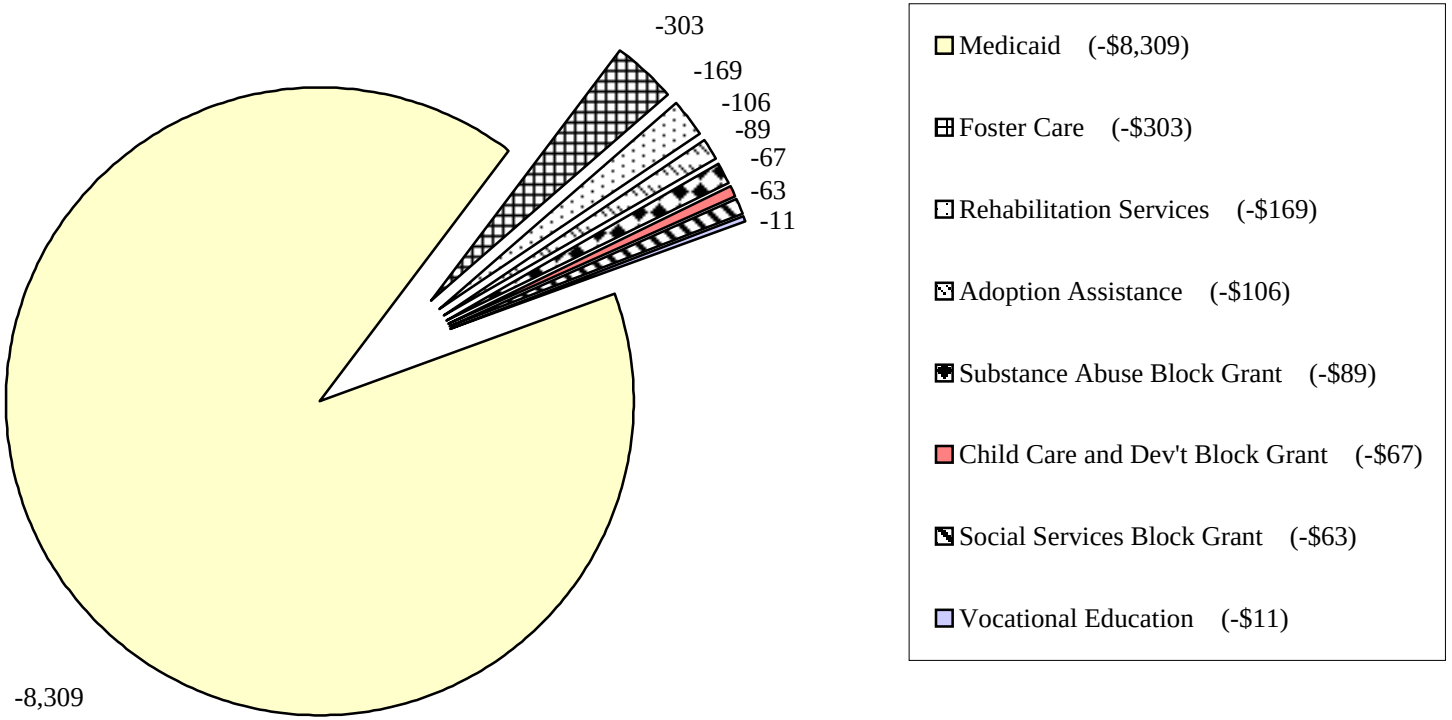
The demographic composition of the "center county" within a metropolitan area frequently is quite different from the surrounding suburbs. As a result, census undercount rates can vary dramatically within a metropolitan area, and this can affect the allocation of federal funds. The "center county" generally is defined as the county containing a metropolitan area's central city.

Seven center counties are estimated to lose over $300 million in federal funding: Los Angeles County, CA; Kings County, NY (which comprises the borough of Brooklyn, NY); Bronx County, NY; New York County, NY (which comprises the borough of Manhattan, NY); Harris County, TX (which contains the city of Houston, TX); San Diego, CA; and Miami-Dade County, FL (see Figure D). In Los Angeles County, CA the funding loss is estimated at over $1.8 billion. (As noted above, these estimates exclude the effect of the Census 2000 undercount on the allocation of state-funded grant programs.)

Conclusion

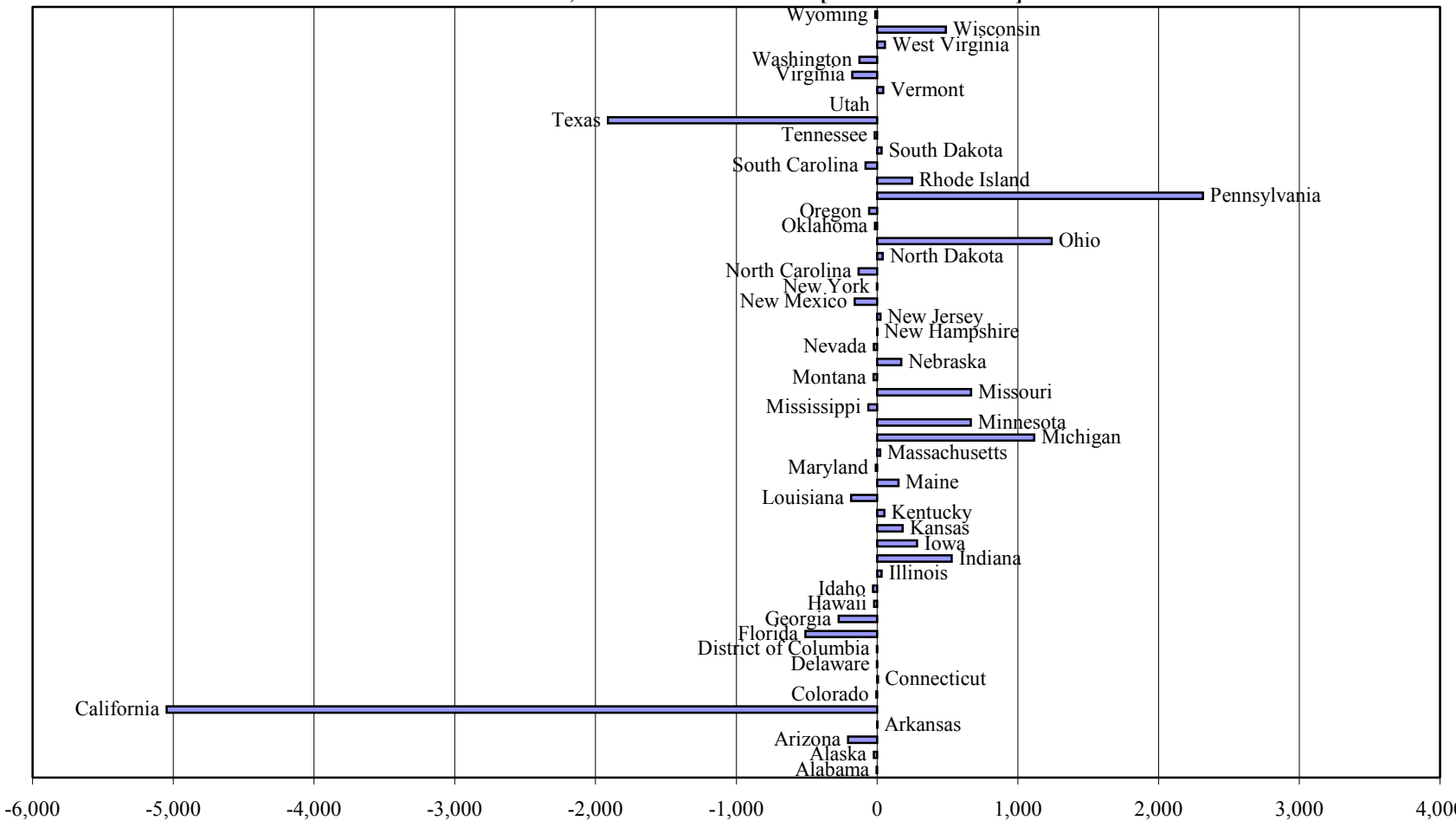
Congress relies on the census for purposes of allocating various federal grants to state governments. Inaccuracies in the census count can cause federal funds to be distributed in a way that is not consistent with congressional intent. Many state-funded grants to localities also rely on census counts, compounding the problem. From the perspective of jurisdictions that are counted relatively poorly by the census, this translates into fewer services for families in need. By participating in Census 2000, all Americans can help ensure that their communities are not short-changed in the allocation of federal and state program funds.

Figure A. Estimated Effect of Census 2000 Undercount on Eight Federal Grant Programs: 26 States with Funding Losses and the District of Columbia, Fiscal Years 2002-2012
[Millions of Dollars]



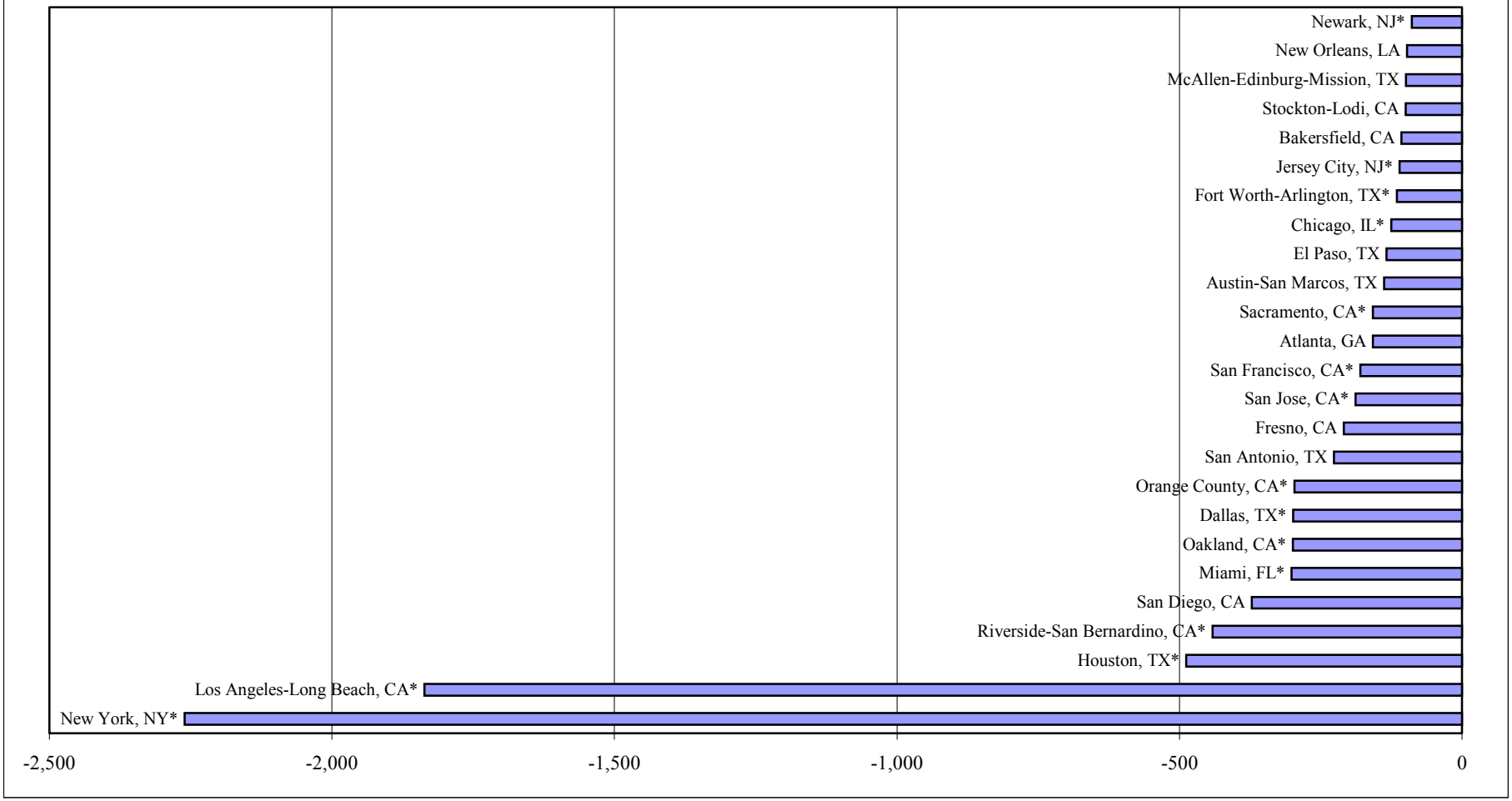
Source: PricewaterhouseCoopers calculations.

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]



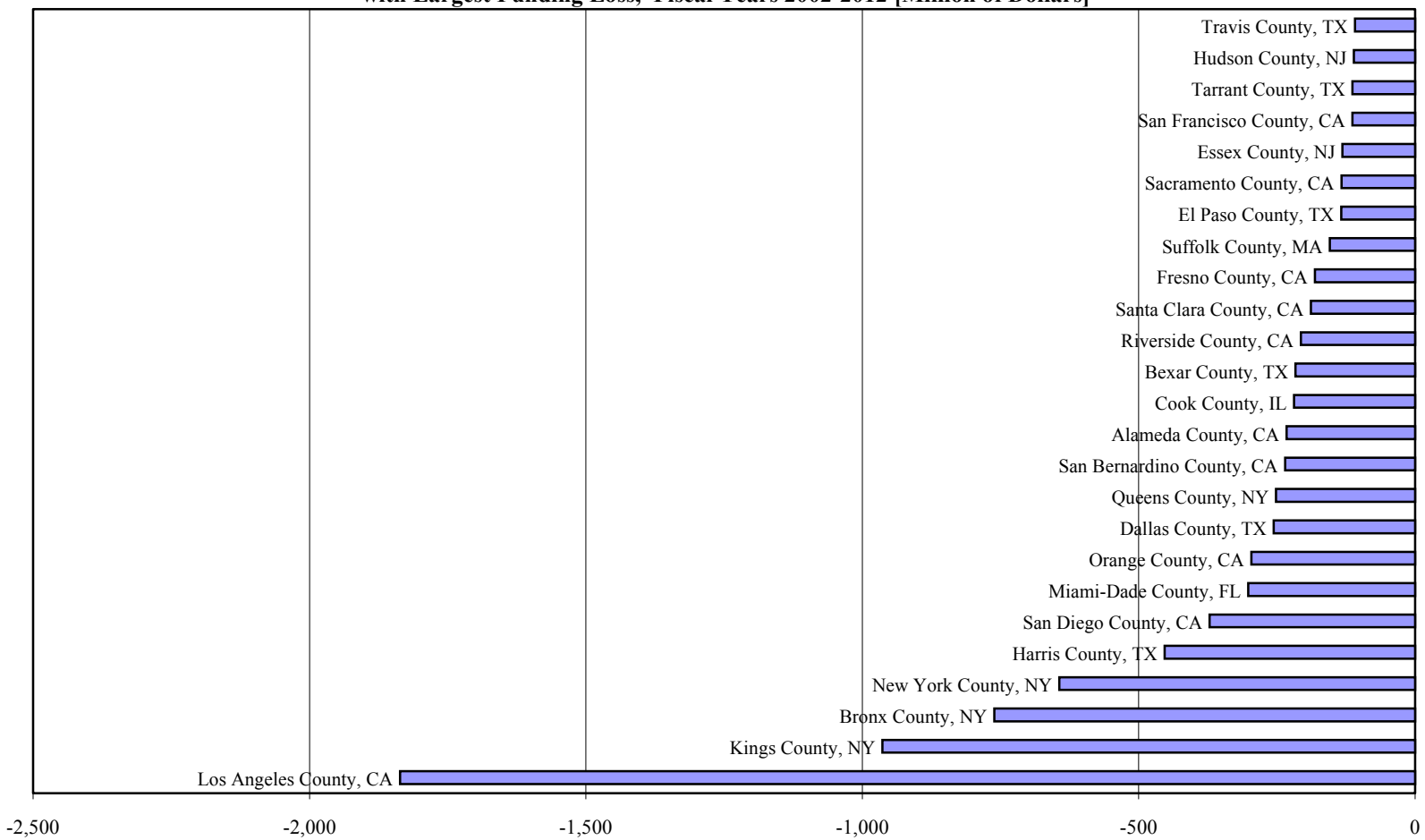
Source: PricewaterhouseCoopers calculations.

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



Source: PricewaterhouseCoopers calculations.
* Primary Metropolitan Statistical Area (PMSA).

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



Source: PricewaterhouseCoopers calculations.

I. INTRODUCTION

The Presidential Members of the United States Census Monitoring Board[1] retained PricewaterhouseCoopers LLP (PwC) to conduct an independent estimate of the Census 2000 undercount, and to project its effects on the allocation of federal funds among states, metropolitan areas, and center counties of metropolitan areas over the next decade.

This report extends previous research undertaken by the General Accounting Office (GAO) and the U.S. Conference of Mayors on the census undercount and its affect on the allocation of federal dollars to states and localities. The Census 2000 undercount is estimated using updated population data by demographic group, and the effect of the undercount is analyzed for a uniform set of federal programs for states and localities over the entire period affected by the census figures.

Under the programs analyzed in this report, the 169 metropolitan areas adversely affected by the Census 2000 undercount are estimated to lose $11.1 billion over the 2002-2012 period. Metropolitan areas not only share in any state losses from the undercount, which amount to $9.1 billion in states with high undercounts, but also suffer additional distortions if their undercounts are high relative to other areas within the state. The federal funding loss in these metropolitan areas translates into a loss of $3,391 per uncounted person in these jurisdictions. Because this report does not include the effect of the undercount on all federal programs or any state programs distributed using census data, these estimates should be treated as conservative.

Section II estimates the Census 2000 undercount at the state, metropolitan area, and center county levels. To estimate the undercount, net undercount rates from the 1990 census by demographic group were applied to unadjusted 2000 population projections by demographic group by county.

Section III estimates the impact of the Census 2000 undercount on the allocation of federal funds to states, metropolitan areas, and counties. 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 metropolitan area level and county level.

The main findings of the report are summarized in Section IV.

Ten appendices accompany this report:

- Appendix A reports the Census Bureau's projections of the unadjusted 2000 population and PricewaterhouseCoopers' estimate of the population undercount, by state and demographic group.

[1] The Presidential Members of the U.S. Census Monitoring Board are Gilbert F. Casellas (Co-Chairman), Cruz M. Bustamante, Everett M. Ehrlich, and Lorraine A. Green.

- Appendix B shows estimated 2000 population totals by metropolitan area with and without adjustments for the estimated undercount.
- Appendix C shows estimated 2000 population totals by center county with and without adjustments for the estimated undercount.
- Appendix D presents the Census 2000 undercount total and undercount rate by center county by demographic group.
- Appendix E describes the federal programs analyzed in this report.
- Appendix F provides detailed information on the estimated funding effects of the Census 2000 undercount by state by program.
- Appendix G provides details on the funding effect of the undercount on metropolitan areas**.**
- Appendix H provides details on the funding effects for center counties.
- Appendix I provides a listing of central cities and center counties by state and metropolitan area.
- Appendix J lists contact information.

II. ESTIMATE OF CENSUS 2000 UNDERCOUNT

A. 1990 Census Undercount Data

Following the 1990 census, the U.S. Census Bureau undertook a 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.[2] For the PES, the Bureau conducted detailed interviews with a sample of households. The results of this intensive interview process were compared to the official 1990 census enumeration to assess the accuracy of the census. This information was used to estimate the net undercount (persons missed less persons incorrectly enumerated) by demographic group, and to prepare an adjusted 1990 population count (i.e., the official count plus an estimate of net uncounted persons).

Pursuant to P.L. 94-171, the Bureau published the official and adjusted 1990 population counts at the Census Block level stratified by 20 demographic groups:

1. Five race groups (White, Black, Asian/Pacific Islander, American Indian/Eskimo/Aleut, and Other);

2. Hispanic origin (yes or no); and

3. Two age groups (over 17 and under 18).

The stratification used in the P.L. 94-171 data differs from the stratification in the Census Bureau's 2000 population projections. The published 2000 population projections have four race groups (i.e., no "Other" race group) and are stratified by age and gender. To make the unadjusted P.L. 94-171 data consistent with the published 2000 population projections, the "Other" race category was reassigned proportionately into the four specified race groups.[3] This reassignment was done at the county level stratified by Hispanic origin and age.[4] Over 97 percent of the population classified in the "Other" race category in the 1990 census are of Hispanic origin (see Table 1). This group is estimated by the Census Bureau to have a very high undercount rate—5.3 net uncounted persons per 100 persons in the adjusted 1990 census enumeration.

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[2] For instance, 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.

[3] The methodology used to map the "Other" group into the four specified race groups is conceptually similar to the procedure used by the Census Bureau, but does not rely on access to individual Census records. The undercounted "Other" population was reassigned to the other four race groups in the same proportion as the enumerated "Other" population. See Census publication CPH-L-74, *Age, Sex, and Hispanic Origin Information from the 1990 Census: A Comparison of Census Results with Results Where Age and Race Have Been Modified*, August 1991.

[4] In New England states, Minor Civil Divisions (MCDs) rather than counties were used for this purpose. MCDs function as the components of MSAs in these states. MCDs can also be aggregated into counties. Outside of New England, MSAs are composed of counties.

Table 1. Count of "Other" Race Group in 1990 Census

Age group	Hispanic Origin		Total
	Yes	No	
Official (Unadjusted) 1990 Census Count			
Under 18	3,493,054	113,380	3,611,434
Over 17	6,062,700	130,713	6,193,413
Total	9,555,754	249,093	9,804,847
Adjusted 1990 Census Count			
Under 18	3,683,795	120,815	3,804,610
Over 17	6,408,477	132,205	6,540,682
Total	10,092,272	253,020	10,345,292
Undercount Rate[a]			
Under 18	5.178%	6.154%	5.077%
Over 17	5.396%	1.129%	5.309%
Total	5.316%	1.552%	5.224%

[a] Excess of adjusted over unadjusted count as a percent of adjusted count.
Source: U.S. Census Bureau and PricewaterhouseCoopers calculations.

After reclassifying the P.L. 94-171 data from five to four race groups, the official and adjusted data were aggregated up to the state level within 16 demographic groups (four races, two age groups, and Hispanic/non-Hispanic). Adjustment factors (i.e., the ratio of the adjusted to the official population count) were calculated for the 16 demographic groups within each of the 50 states and the District of Columbia (816 adjustment factors in total).

B. Projected 2000 Undercount by State

The Census Bureau projects state population levels through 2025 by age, sex, race (White, Black, Asian/Pacific Islander, and American Indian/Eskimo/Aleut), and Hispanic origin.[5] These projections start with the most recent decennial census, and the population in subsequent years is estimated using administrative records, such as birth and death certificates and immigration statistics. The Census Bureau's population projections do not adjust for the population missed in the decennial census nor undocumented immigration. For purposes of this report, the Bureau's state population projections for 2000 were used as an estimate of the official population counts that will be produced in the upcoming 2000 census. To match the

[5] Census publication PPL-47, *Population Projections for States by Age, Sex, Race, and Hispanic Origin: 1995-2025*. Note that these projections are based on 1995 population estimates and may differ from actual 2000 population totals.

demographic cell format for the P.L. 94-171 data, the data were aggregated into two age groups (over 17 and under 18) and genders were combined.

Adjusted 2000 state population counts were estimated using the adjustment factors from the 1990 census and the Census Bureau's 2000 population projections. Specifically, for each of the 16 demographic groups within each state, the adjusted 2000 population count was estimated as the product of the Census Bureau's 2000 population projection and the appropriate adjustment factor determined from the P.L. 94-171 data (see Section II.A, above). The Census 2000 undercount for a state was estimated as the difference between the state's adjusted and unadjusted 2000 population projections.

Based on this methodology, the undercount rate for Census 2000 is projected to be 1.75 percent, or 4.9 million persons (see Table 2).[6] This is higher than the Census Bureau's estimate of the 1990 undercount rate (1.59 percent), and reflects the generally faster growth rates since 1990 of demographic groups that were relatively poorly counted in the 1990 census. The projected 2000 undercount rate used in this report is a conservative estimate. Using demographic analysis of confidential administrative records to supplement undercount factors from the PES, the Census Bureau has estimated that the Census 2000 undercount rate will be 1.9 percent of the true population.[7] Changes in attitudes within demographic groups could also result in an increased undercount rate. For instance, increased suspicion of government could make individuals less likely to respond to the census.

Table A-4 in Appendix A provides net undercount rates by demographic groups. Children and minorities have undercount rates that exceed the national average. Nationally, persons under the age of 18 have an undercount rate of 3.36 percent of the actual population, resulting in almost 2.5 million uncounted children. Of the population over 18, minority groups and Hispanics generally have undercount rates exceeding 3 percent, with several close to or over 5 percent.

Four states account for over 45 percent of the projected Census 2000 undercount: California (1.01 million), Texas (0.61 million), Florida (0.34 million), and New York (0.33 million). States with the highest percentage undercounts are the District of Columbia (3.6 percent), New Mexico (3.1 percent), and California (3.0 percent). States with the lowest undercount rates are Pennsylvania (0.4 percent), Rhode Island (0.4 percent), and Iowa (0.5 percent).

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[6] The GAO report presents 1.62 as the percentage difference between the unadjusted and adjusted 1990 population. This figure represents the net uncounted population divided by the unadjusted population count. In official Census Bureau terminology, this corresponds to the undercount "factor," while the undercount "rate" is the net undercount divided by the adjusted, or actual, population. As a percent of the unadjusted population, the estimated Census 2000 undercount would be 1.78 percent.

[7] Bureau of the Census, *Report to Congress--The Plan for Census 2000*, August 1997.

Table 2. Estimated Census 2000 Undercount by State

State	2000 Population Projections		Estimated 2000 Census Undercount		1990 Undercount Rate[b]
	Without adjustment for undercount	With adjustment for undercount	Number[a]	Rate[b]	
United States	274,633,905	279,520,570	4,886,665	1.75	1.59
Alabama	4,450,583	4,529,922	79,339	1.75	1.78
Alaska	653,293	666,937	13,644	2.05	2.00
Arizona	4,797,526	4,920,243	122,717	2.49	2.38
Arkansas	2,631,383	2,677,467	46,084	1.72	1.75
California	32,521,102	33,529,783	1,008,681	3.01	2.74
Colorado	4,168,224	4,258,653	90,429	2.12	2.06
Connecticut	3,284,142	3,312,393	28,251	0.85	0.64
Delaware	767,559	782,464	14,905	1.90	1.80
District of Columbia	523,328	542,830	19,502	3.59	3.41
Florida	15,233,224	15,569,941	336,717	2.16	1.97
Georgia	7,874,792	8,054,395	179,603	2.23	2.15
Hawaii	1,257,404	1,281,917	24,513	1.91	1.85
Idaho	1,346,506	1,377,221	30,715	2.23	2.19
Illinois	12,050,818	12,182,404	131,586	1.08	0.99
Indiana	6,044,528	6,075,839	31,311	0.52	0.50
Iowa	2,899,829	2,913,111	13,282	0.46	0.42
Kansas	2,668,263	2,689,010	20,747	0.77	0.70
Kentucky	3,994,566	4,058,881	64,315	1.58	1.62
Louisiana	4,424,618	4,523,993	99,375	2.20	2.18
Maine	1,259,170	1,268,481	9,311	0.73	0.74
Maryland	5,274,608	5,395,635	121,027	2.24	2.07
Massachusetts	6,198,746	6,244,609	45,863	0.73	0.48
Michigan	9,678,943	9,751,789	72,846	0.75	0.71
Minnesota	4,829,798	4,855,828	26,030	0.54	0.44
Mississippi	2,815,743	2,876,098	60,355	2.10	2.14
Missouri	5,540,378	5,576,552	36,174	0.65	0.62
Montana	949,657	972,459	22,802	2.34	2.36
Nebraska	1,705,467	1,717,719	12,252	0.71	0.65
Nevada	1,871,299	1,919,561	48,262	2.51	2.35
New Hampshire	1,224,230	1,234,846	10,616	0.86	0.84
New Jersey	8,177,791	8,250,120	72,329	0.88	0.57
New Mexico	1,860,397	1,920,618	60,221	3.14	3.10
New York	18,146,185	18,474,607	328,422	1.78	1.49
North Carolina	7,777,253	7,928,110	150,857	1.90	1.86
North Dakota	661,689	666,663	4,974	0.75	0.66
Ohio	11,318,718	11,400,840	82,122	0.72	0.68
Oklahoma	3,372,514	3,435,350	62,836	1.83	1.79
Oregon	3,397,161	3,464,440	67,279	1.94	1.87
Pennsylvania	12,202,050	12,250,280	48,230	0.39	0.29
Rhode Island	997,607	1,001,737	4,130	0.41	0.13
South Carolina	3,858,023	3,937,527	79,504	2.02	2.05
South Dakota	777,073	785,318	8,245	1.05	0.98
Tennessee	5,657,161	5,758,958	101,797	1.77	1.75
Texas	20,119,335	20,727,421	608,086	2.93	2.78
Utah	2,207,013	2,246,639	39,626	1.76	1.73
Vermont	616,803	623,862	7,059	1.13	1.11
Virginia	6,997,006	7,147,001	149,995	2.10	2.00
Washington	5,858,392	5,973,573	115,181	1.93	1.85
West Virginia	1,840,983	1,866,397	25,414	1.36	1.42
Wisconsin	5,326,324	5,363,914	37,590	0.70	0.61
Wyoming	524,700	536,215	11,515	2.15	2.17

Source: PricewaterhouseCoopers calculations.

[a] Adjusted minus unadjusted 2000 population projections.

[b] Undercount as a percent of adjusted population.

Note: Since preparation of this report, the national projection for 2000 has been updated to 275,306,000.

C. Projected 2000 Undercount by MSA and Center County

The Census Bureau does not currently publish 2000 population projections below the state level. The most recent Census Bureau estimates available below the state level with demographic detail is the 1990 to 1998 Annual Time Series of County Population Estimates by Age, Sex, Race and Hispanic Origin. These estimates are not adjusted for the census undercount. The 1998 estimates were aggregated into five demographic groups (Black, American Indian/Eskimo/Aleut, Asian/Pacific Islander, White Hispanic, White Non-Hispanic) by county and projected to 2000 levels.[8]

Adjusted 2000 county population counts were estimated using the adjustment factors from the 1990 census. Specifically, for each of the five demographic groups within each county, the adjusted 2000 population was estimated as the product of the unadjusted 2000 population and the appropriate adjustment factor determined from the 1990 Post-Enumeration Survey (see Section II.A, above). Adjusted and unadjusted 2000 population projections for metropolitan statistical areas (MSAs) were calculated by aggregating the counties within each area.[9] The Census 2000 undercount for each county was estimated as the difference between the county's adjusted and unadjusted 2000 population projection.

Metropolitan Areas

Because demographic groups with high undercount rates are more concentrated in urban areas, undercount rates in MSAs are generally higher than the national average. In total, the undercount rate for all MSAs reaches 1.82 percent. The 25 MSAs with the highest undercount rates are shown in Table 3. The MSAs with the largest estimated Census 2000 undercount rate are Flagstaff, AZ (5.28 percent); El Paso, TX (4.32 percent); and Merced, CA (4.28 percent). In addition to Arizona, Texas, and California, the top 25 list includes MSAs located in Florida, Washington, the District of Columbia, New Jersey, New Mexico, New York, and Oregon. (The 2000 population projections for all MSAs are contained in Appendix B.)

[8] The 1990-1998 growth rates by demographic group by county were used to project 2000 population totals. The projections were controlled to match the Census Bureau's 2000 projections at the state level.

[9] Metropolitan areas are designated as Metropolitan Statistical Areas (MSAs), Primary Metropolitan Statistical Areas (PMSAs), and New England County Metropolitan Areas (NECMAs) by the Census Bureau. For simplicity, all three designations are referred to as MSAs in this report. For MSAs which span state boundaries, components in separate states are reported in the state containing the component.

Table 3. Census 2000 Undercount by Metropolitan Area: 25 MSAs with the Largest Undercount Rates

MSA	2000 Population Projections		Estimated 2000 Undercount	
	Without adjustment for undercount	With adjustment for undercount	Number	Rate[a]
Total, All MSAs	219,885,182	223,969,889	4,084,707	1.82
1. Flagstaff, AZ-UT MSA (AZ portion)	115,603	122,042	6,438	5.28
2. El Paso, TX MSA	695,704	727,138	31,434	4.32
3. Merced, CA MSA	197,539	206,382	8,842	4.28
4. McAllen-Edinburg-Mission, TX MSA	529,394	552,940	23,546	4.26
5. Visalia-Tulare-Porterville, CA MSA	356,810	372,135	15,326	4.12
6. Fresno, CA MSA	878,648	916,099	37,450	4.09
7. Miami, FL PMSA	2,151,727	2,241,902	90,176	4.02
8. Corpus Christi, TX MSA	382,536	397,393	14,858	3.74
9. Yolo, CA PMSA	152,176	158,020	5,844	3.70
10. San Antonio, TX MSA	1,540,126	1,599,034	58,908	3.68
11. Salinas, CA MSA	359,044	372,718	13,675	3.67
12. Yakima, WA MSA	219,116	227,350	8,234	3.62
13. Los Angeles-Long Beach, CA PMSA	9,109,292	9,450,954	341,662	3.62
14. Washington, DC-MD-VA-WV PMSA (DC portion)	523,328	542,830	19,502	3.59
15. Jersey City, NJ PMSA	548,813	568,647	19,833	3.49
16. Bryan-College Station, TX MSA	134,511	139,182	4,671	3.36
17. Stockton-Lodi, CA MSA	554,293	573,393	19,100	3.33
18. Houston, TX PMSA	4,019,454	4,157,348	137,894	3.32
19. Santa Barbara-Santa Maria-Lompoc, CA MSA	382,182	395,191	13,009	3.29
20. Austin-San Marcos, TX MSA	1,162,314	1,201,692	39,378	3.28
21. Brownsville-Harlingen-San Benito, TX MSA	325,178	336,155	10,978	3.27
22. Las Cruces, NM MSA	183,866	190,039	6,173	3.25
23. New York, NY PMSA	8,729,589	9,020,776	291,187	3.23
24. Bakersfield, CA MSA	634,278	655,175	20,897	3.19
25. Corvallis, OR MSA	79,643	82,244	2,600	3.16

Source: PricewaterhouseCoopers calculations.

[a] Undercount as a percent of adjusted population.

Center Counties

For purposes of this report, the "center county" of an MSA is defined as the county containing the MSA's central city.[10] Where the central city boundary crosses a county line, each county that contains a portion of the central city is treated as a center county. In a few instances, an MSA has more than one central city. In these cases the county containing each central city is treated as a center county.[11]

Because of their demographic composition, the center counties of the MSAs generally experience undercount rates higher than the overall MSA. In total, the undercount rate for all center counties reaches 2.04 percent. The 25 center counties with the highest undercount rates are shown in Table 4. The three center counties with the highest estimated Census 2000 undercount rates are Coconino County, AZ (5.28 percent), Bronx County, NY (5.25 percent), and El Paso County, TX (4.32 percent). In addition to Arizona, New York, and Texas, the top 25 list contains counties in California, Florida, Washington, the District of Columbia, New Jersey, Louisiana, and Maryland. The 2000 population projections for all Center Counties are contained in Appendix C. Appendix D presents the undercount totals and undercount rates for the center counties by demographic group.

[10] Note that this definition of center county, a term specific to this report, differs in a few cases from the Census Bureau definition of "central county." In some cases, the Bureau designates counties as "central" even when they do not contain a central city. We have excluded such counties from our definition of center county.

[11] In addition to the counties containing central cities, we also identify and present results for the remaining counties containing boroughs of New York City. Thus, we include Bronx County, Kings County, Queens County, and Richmond County in our list and tables of counties containing central cities.

Table 4. Census 2000 Undercount by County containing Central City: 25 Counties with the Largest Undercount Rates

MSA	2000 Population Projections		Estimated 2000 Undercount	
	Without adjustment for undercount	With adjustment for undercount	Number	Rate[a]
Total, Center Counties	173,685,927	177,300,582	3,614,655	2.04
1. Coconino County, AZ	115,603	122,042	6,438	5.28
2. Bronx County, NY	1,203,154	1,269,772	66,618	5.25
3. El Paso County, TX	695,704	727,138	31,434	4.32
4. Merced County, CA	197,539	206,382	8,842	4.28
5. Hidalgo County, TX	529,394	552,940	23,546	4.26
6. Kings County, NY	2,266,301	2,364,112	97,812	4.14
7. Tulare County, CA	356,810	372,135	15,326	4.12
8. Fresno County, CA	760,018	792,449	32,432	4.09
9. New York County, NY	1,567,069	1,633,366	66,297	4.06
10. Madera County, CA	118,631	123,649	5,019	4.06
11. Miami-Dade County, FL	2,151,727	2,241,902	90,176	4.02
12. Bexar County, TX	1,345,373	1,399,723	54,350	3.88
13. Nueces County, TX	310,288	322,595	12,307	3.81
14. Yolo County, CA	152,176	158,020	5,844	3.70
15. Travis County, TX	733,808	761,968	28,160	3.70
16. Monterey County, CA	359,044	372,718	13,675	3.67
17. Franklin County, WA	46,862	48,644	1,782	3.66
18. Yakima County, WA	219,116	227,350	8,234	3.62
19. Los Angeles County, CA	9,109,292	9,450,954	341,662	3.62
20. District of Columbia	523,328	542,830	19,502	3.59
21. Harris County, TX	3,236,068	3,356,335	120,267	3.58
22. Hudson County, NJ	548,813	568,647	19,833	3.49
23. San Patricio County, TX	72,248	74,798	2,551	3.41
24. Orleans Parish, LA	461,364	477,626	16,262	3.40
25. Baltimore City, MD	627,252	649,222	21,970	3.38

Source: PricewaterhouseCoopers calculations.

[a] Undercount as a percent of adjusted population.

III. 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) Child Care 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 study of the effects of the 1990 census undercount on federal funding to states in fiscal year 1998.

According to the Congressional Research Service, $185 billion in federal grants was allocated to states and localities using census population data in FY 1998. The GAO study focused on 25 large formula grant programs, representing 90 percent of the total. Of the 25 programs analyzed in the GAO study, ten programs (amounting to $20 billion) 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, seven of the programs (amounting to $30 billion) were not affected by the undercount because the formulae used population figures adjusted for the undercount or the formulae had components which made the undercount immaterial.

The remaining eight programs (listed in Table 5) were affected by the undercount. These programs represent over 82 percent of the funding under programs over $500 million that depend on unadjusted census counts.

Table 5: Federal Grant Programs and FY 1998 Obligations

[Obligations in billions of dollars; Programs over $500 million affected by census undercount]

Program	Obligations
Medicaid	$100.5
Foster Care	3.5
Social Services Block Grant	2.3
Rehabilitation Services Basic Support	2.2
Substance Abuse Prevention and Treatment Block Grant	1.4
Vocational Education Basic Grants	1.0
Child Care and Development Block Grant	1.0
Adoption Assistance	0.7
Subtotal, eight programs included in study	**112.6**
Total, federal grants over $500 million affected by census undercount[a]	**$136.7**

[a] Calculated by subtracting the funding for the seven programs found by GAO to be unaffected by the undercount ($30 billion) from the funding for the 25 largest programs allocated using census figures ($167 billion).

Source: Budget of the United States, FY 2000, GAO, and PricewaterhouseCoopers calculations.

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.[12]

For each of the eight federal grant programs analyzed in this report, the Administration's FY 2000 budget projects Current Services funding levels through 2009. The Current Services Budget estimates funding levels necessary to continue programs at a level equal to the most recently funded year (i.e., 1999 for the 2000 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 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 2000 budget includes Current Services funding levels through 2009. Funding levels for the eight 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 2000-2009 budget period (see Table 6).[13]

Assuming the Current Services spending levels, census population counts from Census 2000 will be used to distribute almost $2.3 trillion over the 2002-2012 fiscal year period.

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[12] This report assumes that the effects 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.

[13] The Administration's FY 2000 budget projects that the GDP price index (a measure of inflation) will rise at 2.1 percent annually over the 2000-2009 period. Accordingly, Current Services funding levels for discretionary programs are extrapolated through 2012 assuming an annual growth rate of 2.1 percent. The Current Services Budget projects slowing growth for the entitlement programs; this trend is assumed to continue over the 2010-2012 period. Current Services funding levels for the remaining mandatory programs are extrapolated over the 2010-1012 period using their annual growth rates over the 2000-2009 budget period (2.3 percent for Rehabilitation Services, zero percent for the Social Services Block Grant).

Table 6. Current Services Budget Projections for Eight Federal Grant Programs, FY 2002-2012

[Fiscal Years; Millions of Dollars]

Program	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2002-2012
1. Medicaid	-	$141,197	$152,321	$164,900	$178,800	$193,600	$209,400	$226,000	$243,403	$261,609	$280,616	$2,051,846
2. Foster Care	-	5,724	6,150	6,612	7,110	7,645	8,222	8,843	9,506	10,219	10,985	81,016
3. Adoption Assistance	-	1,564	1,804	2,061	2,360	2,675	3,034	3,442	3,903	4,426	5,019	30,289
4. Rehabilitation Services Basic Support	2,448	2,504	2,562	2,621	2,681	2,743	2,806	2,870	2,937	3,004	-	27,176
5. Substance Abuse Prevention and Treatment Block Grant	-	1,725	1,761	1,798	1,836	1,875	1,914	1,954	1,995	2,037	2,080	18,977
6. Social Services Block Grant	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	-	17,000
7. Vocational Education Basic Grants	1,113	1,137	1,161	1,185	1,210	1,236	1,262	1,288	1,315	1,343	-	12,252
8. Child Care and Development Block Grant	1,063	1,086	1,108	1,131	1,155	1,179	1,204	1,229	1,255	1,282	-	11,693
Total	**$6,324**	**$156,637**	**$168,567**	**$182,009**	**$196,853**	**$212,653**	**$229,542**	**$247,327**	**$266,014**	**$285,620**	**$298,701**	**$2,250,248**

Source: Administration Fiscal Year 2000 Budget and PricewaterhouseCoopers calculations.

Note: Baseline estimates are shown for the 10-year period over which funding levels are affected by Census 2000.

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 to the 2002-2012 period. The base year for each grant program was determined as the most recent year for which data were available for all of the variables (other than population) in the funding formula. For example, the formula for Vocational Education depends on personal income by state as released by the Bureau of Economic Analysis (BEA). The most recent personal income figures available are for 1998; consequently, the base year for the Vocational Education program in this study is 2000.

Once a base year was established for each program, state funding allocations were calculated 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 could then be 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 percent (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 26 states and the District of Columbia by $9.l billion over the 2002-2012 period (see Table 7). In 2003 alone, the undercount is estimated to reduce federal funds allocated to these states by $636 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. The 42 percent increase in the estimated impact of the census

undercount between 1998 and 2003 (from $449 million to $636 million) reflects both the increase in the undercount rate between the 1990 and 2000 censuses and the underlying growth in federal grant programs.

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 $722 million less over the 2002-2012 fiscal year period as a result of the Census 2000 undercount.

In the District of Columbia and the 26 states that are estimated to lose federal funding as a result of the Census 2000 undercount, the losses of funds over the 2002-2012 period for the eight analyzed programs range between insignificant and over $5,000 per person missed by the census in each jurisdictions (see Table 8).[14] The funding loss in these states and the District of Columbia in 2003, the first year fully impacted by the undercount, averages $159 per uncounted individual. This figure is comparable to GAO's 1998 estimate of $145 per uncounted individual.

Of the eight federal programs analyzed in this report, Medicaid accounts for 91 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 Rehabilitation Services (0.62 percent) and the Child Care and Development Block Grant (0.58 percent). Table 9 summarizes the impact of the Census 2000 undercount by program.

[14] Because of statutory provisions which 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 F-5 in Appendix F lists the effect of the census undercount on state funding levels under the Medicaid program.

Table 7. Estimated Funding Effect of Census 2000 Undercount by State on Eight Federal Grant Programs, FY 2002-2012

[Fiscal Years; Millions of Dollars]

State	2002	2003	2004	2005	2006	2012	2002-2012	Percent of Total Funding
Alabama	-*	**-$0.1**	**-$0.2**	**-$0.2**	**-$0.2**	**-$0.3**	**-$2.3**	**-0.01%**
Alaska	-*	**-1.5**	**-1.6**	**-1.8**	**-1.9**	**-3.0**	**-22.0**	**-0.36%**
Arizona	**-0.9**	**-14.4**	**-15.5**	**-16.7**	**-18.1**	**-26.8**	**-205.8**	**-0.71%**
Arkansas	*	0.3	0.3	0.3	0.3	0.5	3.7	0.02%
California	**-12.3**	**-350.9**	**-377.8**	**-408.0**	**-441.4**	**-672.8**	**-5,047.8**	**-2.15%**
Colorado	**-0.4**	**-0.5**	**-0.5**	**-0.5**	**-0.5**	**-0.2**	**-5.4**	**-0.03%**
Connecticut	0.4	0.6	0.6	0.6	0.6	0.3	6.2	0.02%
Delaware	-*	-*	-*	-*	-*	0.0	**-0.4**	**-0.01%**
District of Columbia	**-0.2**	**-0.2**	**-0.2**	**-0.2**	**-0.2**	0.0	**-2.1**	**-0.02%**
Florida	**-1.6**	**-35.5**	**-38.2**	**-41.2**	**-44.6**	**-67.3**	**-509.3**	**-0.61%**
Georgia	**-1.1**	**-19.0**	**-20.4**	**-22.1**	**-23.8**	**-35.5**	**-272.0**	**-0.62%**
Hawaii	-*	**-1.4**	**-1.5**	**-1.6**	**-1.8**	**-2.7**	**-20.3**	**-0.30%**
Idaho	**-0.1**	**-2.0**	**-2.2**	**-2.4**	**-2.5**	**-3.9**	**-29.1**	**-0.37%**
Illinois	2.3	3.0	3.1	3.2	3.2	0.9	32.6	0.04%
Indiana	2.1	37.0	39.8	42.9	46.4	69.3	529.3	1.50%
Iowa	1.1	19.8	21.3	23.0	24.9	37.5	284.7	1.45%
Kansas	0.9	12.8	13.8	14.9	16.0	23.7	182.8	1.25%
Kentucky	0.2	3.7	3.9	4.2	4.6	6.9	52.3	0.13%
Louisiana	**-0.5**	**-12.8**	**-13.7**	**-14.8**	**-16.1**	**-24.3**	**-183.6**	**-0.37%**
Maine	0.4	10.6	11.4	12.3	13.4	20.4	152.8	1.01%
Maryland	**-0.7**	**-0.8**	**-0.8**	**-0.8**	**-0.9**	**-0.1**	**-8.7**	**-0.03%**
Massachusetts	1.6	2.1	2.1	2.1	2.2	0.5	22.1	0.04%
Michigan	3.1	77.3	83.3	90.0	97.4	148.9	1,116.5	1.50%
Minnesota	1.6	46.4	49.9	53.9	58.3	88.9	667.0	2.10%
Mississippi	**-0.3**	**-4.3**	**-4.7**	**-5.0**	**-5.5**	**-8.1**	**-62.2**	**-0.21%**
Missouri	1.7	46.5	50.1	54.1	58.5	88.8	668.5	1.39%
Montana	**-0.2**	**-1.8**	**-1.9**	**-2.1**	**-2.2**	**-3.2**	**-25.2**	**-0.43%**
Nebraska	0.5	11.9	12.8	13.9	15.0	22.7	171.2	1.26%
Nevada	**-0.3**	**-1.7**	**-1.8**	**-1.9**	**-2.0**	**-2.5**	**-22.4**	**-0.34%**
New Hampshire	0.3	0.3	0.3	0.3	0.3	0.0	3.1	0.04%
New Jersey	1.6	2.2	2.3	2.3	2.4	0.8	24.1	0.04%
New Mexico	**-0.6**	**-11.1**	**-12.0**	**-12.9**	**-13.9**	**-20.9**	**-159.1**	**-0.94%**
New York	0.1	**-0.2**	**-0.2**	**-0.2**	**-0.2**	**-0.4**	**-1.8**	-*
North Carolina	**-0.4**	**-9.1**	**-9.8**	**-10.6**	**-11.5**	**-17.4**	**-131.2**	**-0.19%**
North Dakota	0.2	2.8	3.0	3.3	3.5	5.2	40.1	0.77%
Ohio	3.3	86.3	92.9	100.3	108.5	164.7	1,240.1	1.37%
Oklahoma	**-0.1**	**-1.0**	**-1.1**	**-1.1**	**-1.2**	**-1.8**	**-14.2**	**-0.06%**
Oregon	**-0.1**	**-3.9**	**-4.2**	**-4.6**	**-4.9**	**-7.5**	**-56.4**	**-0.24%**
Pennsylvania	4.3	160.8	173.1	187.1	202.4	310.3	2,316.2	2.21%
Rhode Island	0.4	17.2	18.5	20.0	21.7	33.6	248.8	2.20%
South Carolina	**-0.3**	**-5.7**	**-6.1**	**-6.6**	**-7.2**	**-10.8**	**-81.9**	**-0.23%**
South Dakota	0.2	2.2	2.4	2.6	2.8	4.1	31.9	0.58%
Tennessee	**-0.1**	**-1.1**	**-1.2**	**-1.3**	**-1.4**	**-2.2**	**-16.2**	**-0.03%**
Texas	**-7.0**	**-133.8**	**-143.8**	**-155.1**	**-167.6**	**-250.9**	**-1,912.2**	**-1.45%**
Utah	0.3	0.1	0.1	0.1	0.1	**-0.3**	0.8	0.01%
Vermont	0.1	3.1	3.3	3.6	3.9	6.0	44.7	0.68%
Virginia	**-0.7**	**-12.3**	**-13.3**	**-14.3**	**-15.5**	**-23.2**	**-176.7**	**-0.61%**
Washington	**-0.2**	**-8.7**	**-9.3**	**-10.1**	**-10.9**	**-16.8**	**-125.1**	**-0.32%**
West Virginia	0.2	3.8	4.1	4.5	4.8	7.2	54.9	0.26%
Wisconsin	1.6	34.0	36.6	39.5	42.8	64.7	488.9	1.38%
Wyoming	-*	**-0.9**	**-0.9**	**-1.0**	**-1.1**	**-1.6**	**-12.3**	**-0.42%**
Total, United States	**$0.0**	**-$49.8**	**-$53.7**	**-$58.1**	**-$63.0**	**-$98.6**	**-$721.9**	**-0.03%**
Funding Gains	$28.7	$586.1	$630.4	$680.3	$735.4	$1,106.2	$8,396.3	0.38%
Funding Losses	**-$28.7**	**-$636.0**	**-$684.1**	**-$738.4**	**-$798.3**	**-$1,204.8**	**-$9,118.2**	**-0.42%**

Source: PricewaterhouseCoopers calculations.

Note: An asterisk (*) denotes a gain of less than $50,000; a negative asterisk (-*), a loss of less than $50,000 or 0.005%.

Table 8. Estimated Funding Effect of Census 2000 Undercount on Eight Federal Programs: States with High Undercounts, FY 2002-2012

State	Funding Loss Per Uncounted Individual
Alabama	**-$28**
Alaska	**-1,609**
Arizona	**-1,677**
California	**-5,004**
Colorado	**-60**
Delaware	**-25**
District of Columbia	**-106**
Florida	**-1,512**
Georgia	**-1,514**
Hawaii	**-828**
Idaho	**-946**
Louisiana	**-1,847**
Maryland	**-72**
Mississippi	**-1,030**
Montana	**-1,105**
Nevada	**-463**
New Mexico	**-2,642**
New York	**-5**
North Carolina	**-870**
Oklahoma	**-226**
Oregon	**-839**
South Carolina	**-1,030**
Tennessee	**-159**
Texas	**-3,145**
Virginia	**-1,178**
Washington	**-1,086**
Wyoming	**-$1,066**

Source: PricewaterhouseCoopers calculations.

Table 9. Estimated Funding Effect of Census 2000 Undercount by Federal Grant Program, FY 2002-2012

[Millions of Dollars]

	Total Funding	State Funding Losses Due to Undercount	State Funding Gains Due to Undercount	Losses as a Percent of Total Funding	Gains as a Percent of Total Funding
Medicaid	$1,996,846	**-$8,309**	$7,664	**-0.42%**	0.38%
Foster Care	80,991	**-303**	226	**-0.37%**	0.28%
Rehabilitation Services Basic Support	27,176	**-169**	169	**-0.62%**	0.62%
Social Services Block Grant	16,905	**-63**	63	**-0.38%**	0.38%
Substance Abuse Prevention and Treatment Block Grant	17,757	**-89**	89	**-0.50%**	0.50%
Adoption Assistance	30,289	**-106**	106	**-0.35%**	0.35%
Child Care and Development Block Grant	11,693	**-67**	67	**-0.58%**	0.58%
Vocational Education Basic Grants	11,394	**-11**	11	**-0.10%**	0.10%
Total	**$2,193,052**	**-$9,118**	**$8,396**	**-0.42%**	**0.38%**

Source: PricewaterhouseCoopers calculations.

Note: Total funding levels reflect totals of amounts distributed to states. Amounts distributed to territories and undistributed amounts are excluded.

D. Funding Effect of Census 2000 Undercount on MSAs

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

The Census 2000 undercount can affect federal funding to metropolitan areas 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). Metropolitan areas in the state, such as 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 Chicago is estimated to experience a high undercount rate relative to the other areas in 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 metropolitan area 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 metropolitan areas within each state, the between-state funding effect was estimated in three steps. First, the effect of the Census 2000 undercount on the state's level of federal funding was calculated for the 2002-2012 period (see section III.C., above). Second, the funding effect at the state level was apportioned among the counties in proportion to their *unadjusted* population counts. Third, between-state funding effects at the MSA level were determined by summing the county-level effects. Thus, metropolitan areas 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 metropolitan areas within each state, the within-state funding effect was estimated in five 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 projected 2000 *adjusted* census counts. Third, state funding was apportioned among the counties in proportion to their projected 2000 *official* (unadjusted) census counts. Fourth, 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). Finally, within-state funding effects at the MSA level were determined by aggregating the county-level effects.

Metropolitan areas 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 metropolitan areas 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 metropolitan area, these two funding effects can work in the same or opposite directions. For example, Chicago is estimated to have a *positive* $22 million *between-state* funding effect, because the State of Illinois is relatively well counted by the census. However, Chicago is estimated to have a *negative* $147 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 Chicago of the Census 2000 undercount is *negative* $125 million ($147 million less $22 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.

In total, the 169 metropolitan areas adversely affected by the undercount lose $11.1 billion in federal funding over the 2002-2012 period, or $3,391 per uncounted person in these jurisdictions. The within-state effects cause the sum of the losses by metropolitan areas adversely affected by the undercount to exceed the loss by states adversely affected by the undercount ($9.1 billion).

Table 10 shows the net funding effect of the Census 2000 undercount on the 25 MSAs that are estimated to experience the largest loss in federal funding over the 2002-2012 period. The New York, NY metropolitan area is estimated to suffer the largest federal funding loss ($2.3 billion), followed by Los Angeles-Long Beach, CA ($1.8 billion) and Houston, TX ($0.5 billion). Results for all MSAs are shown in Appendix G.

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.

Table 10. Estimated Effect of Census 2000 Undercount on Eight Federal Grant Programs: 25 MSAs with Largest Funding Losses, FY 2002-2012

[Dollar amounts in thousands]

MSA	Net Funding Effect
1. New York, NY PMSA	-$2,260,671
2. Los Angeles-Long Beach, CA PMSA	-1,836,419
3. Houston, TX PMSA	-488,298
4. Riverside-San Bernardino, CA PMSA	-441,468
5. San Diego, CA MSA	-371,816
6. Miami, FL PMSA	-301,651
7. Oakland, CA PMSA	-299,321
8. Dallas, TX PMSA	-298,844
9. Orange County, CA PMSA	-296,314
10. San Antonio, TX MSA	-226,421
11. Fresno, CA MSA	-209,253
12. San Jose, CA PMSA	-188,284
13. San Francisco, CA PMSA	-179,890
14. Atlanta, GA MSA	-157,499
15. Sacramento, CA PMSA	-157,478
16. Austin-San Marcos, TX MSA	-137,984
17. El Paso, TX MSA	-133,519
18. Chicago, IL PMSA	-124,952
19. Fort Worth-Arlington, TX PMSA	-115,273
20. Jersey City, NJ PMSA	-110,615
21. Bakersfield, CA MSA	-107,199
22. Stockton-Lodi, CA MSA	-99,667
23. McAllen-Edinburg-Mission, TX MSA	-99,185
24. New Orleans, LA MSA	-97,116
25. Newark, NJ PMSA	-$88,969

Source: PricewaterhouseCoopers calculations.

E. Funding Effect of Census 2000 Undercount on Center Counties

The demographic make-up of the central city within a metropolitan area frequently is quite different than the surrounding suburbs. As a result, census undercount rates can vary dramatically between the central city and the surrounding metropolitan area, and this can affect the allocation of federal grants within metropolitan areas. These intra-metropolitan area funding effects are shown in Table 11, which reports the net effect of the Census 2000 undercount on federal funding to the 25 center counties most adversely affected by the undercount. (Funding effects for all center counties are contained in Appendix H.) The center county within an MSA is the county that contains the MSA's central city. For central cities that span several counties, funding effects are reported for each county that includes part of the central city.

The three center counties that are estimated to suffer the largest loss in federal funding over the 2002-2012 period as a result of the Census 2000 undercount are: Los Angeles County, CA ($1.8 billion); Kings County, NY ($1.0 billion); and Bronx County, NY ($0.8 billion).

Because this analysis ignores any state and metropolitan programs that could contribute funds to counties, the figures presented here could underestimate the impact of the Census 2000 undercount. If state and local programs rely on population counts to distribute funds to counties, the distortions caused by the undercount could be larger.

Table 11. Estimated Effect of Census 2000 Undercount on Eight Federal Grant Programs: 25 Center Counties with the Largest Funding Loss, FY 2002-2012

[Dollar amounts in thousands]

Center County	Net Funding Effect
1. Los Angeles County, CA	-$1,836,419
2. Kings County, NY[a]	-963,822
3. Bronx County, NY[a]	-760,928
4. New York County, NY[a]	-643,772
5. Harris County, TX	-453,026
6. San Diego County, CA	-371,816
7. Miami-Dade County, FL	-301,651
8. Orange County, CA	-296,314
9. Dallas County, TX	-255,883
10. Queens County, NY[a]	-251,623
11. San Bernardino County, CA	-234,917
12. Alameda County, CA	-232,643
13. Cook County, IL	-219,003
14. Bexar County, TX	-216,515
15. Riverside County, CA	-206,551
16. Santa Clara County, CA	-188,284
17. Fresno County, CA	-181,270
18. Suffolk County, MA	-154,058
19. El Paso County, TX	-133,519
20. Sacramento County, CA	-132,891
21. Essex County, NJ	-131,641
22. San Francisco County, CA	-113,461
23. Tarrant County, TX	-113,168
24. Hudson County, NJ	-110,615
25. Travis County, TX	-$108,483

Source: PricewaterhouseCoopers calculations.

[a] Although New York County, NY is the sole "center" county for New York City, the counties containing the other boroughs of New York City have also been included in the analysis.

IV. CONCLUSION

Congress relies on the census for purposes of allocating 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. From the perspective of jurisdictions that are counted relatively poorly by the census, this translates into fewer services provided by programs that generally are directed towards families with special needs. By participating in Census 2000, all Americans can help ensure that their communities are not short-changed in the allocation of federal and state program funding.

This study expands on previous research by the GAO and U.S. Conference of Mayors. First, the Census 2000 undercount is estimated using updated demographic characteristics that affect undercount rates. Second, the funding effects of the undercount are estimated for the entire decade affected by the census figures.

Using information from the 1990 census, the 1990 Post-Enumeration Survey, and more recent census estimates, PwC projects Census 2000 will underestimate the actual population by almost five million individuals, representing an undercount rate of 1.75 percent of the true population. Using demographic analysis of confidential administrative records to supplement undercount factors from the Post-Enumeration Survey, the Census Bureau has estimated that the Census 2000 undercount rate will be 1.9 percent of the true population.

Members of minority groups and children experience undercount rates that exceed those for the rest of the population. The net undercount rate for children is estimated to reach 3.36 percent, and the rate for certain minority groups exceeds five percent.

The census undercount affects the flow of federal funds to metropolitan areas both because it shifts federal resources among state governments and because it alters the way states allocate funds to localities. Because of the high undercount in urban areas, the shift in federal funds due to the Census 2000 undercount is particularly large in metropolitan areas and center counties.

For the eight federal grant programs analyzed in this study, the Census 2000 undercount is estimated to cause the District of Columbia and 26 states adversely affected by the undercount to lose $9.1 billion in federal funding over the 2002-2012 fiscal year period. The shift in federal funds due to the Census 2000 undercount is particularly large in metropolitan areas because relatively poorly counted demographic groups are concentrated in urban areas. These areas not only share in state losses from the undercount but also lose funds to other localities within the state because of the high relative undercounts of urban areas. The federal funding loss to the 169 metropolitan areas adversely affected by the undercount is estimated to reach $11.1 billion over the period, or $3,391 per uncounted person in these jurisdictions. Because this report does not include all population-based federal programs or any of

the state programs distributed using census data, these estimates should be treated as conservative.

The census undercount not only redistributes funds among jurisdictions, it also causes a net loss in federal funding to the states from entitlement programs such as Medicaid and Foster Care. For the programs included in this study, the Census 2000 undercount is estimated to reduce federal funds to *all* states combined by $722 million over the 2002-2012 period.