Comparison of Alternatives for Controlling Group Quarters Person Estimates in the American Community Survey

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Abstract

Estimation for persons residing in group quarters (GQ) has been carried out only once with American Community Survey data. In 1999 there were 36 counties in sample and GQ stratification, sampling, and weighting was done separately for each county. For the full GQ implementation that began in 2006, a new GQ sort by type within state and selection across the whole state was used, making it possible to also weight GQ persons by state. A simulation study using Census 2000 data evaluated five alternatives for controlling estimates of GQ persons in the weighting: (1) no control, controlling by demographics for (2) GQ persons by state and for GQ and HU persons combined by (3) estimation area (large county or group of smaller counties) and (4) state, and (5) controlling by major GQ types for state. The simulation is described and analyses of the results are presented.

Keywords: American Community Survey, group quarters, estimation, controls

1. Background and Objectives

The American Community Survey (ACS) is a large continuous survey that replaces the Decennial Census long form sample. The sample for the ACS is selected in each of the 3,141 counties and county equivalents in the United States, including the District of Columbia, and each of the 78 *municipios* in Puerto Rico. Samples of housing unit (HU) addresses and group quarters (GQ) facilities are selected separately. The first full-implementation sample of HU addresses was selected for use in 2005. Each year the ACS samples about three million HU addresses in the United States and about 36,000 HU addresses in Puerto Rico. The first full-implementation sample of GQ facilities was selected for use in 2006 and approximately 2.5 percent of the people in GQ facilities are included in the ACS annually.

Each sample HU address is assigned a month during which the address is eligible to receive a mail questionnaire; an interview may be completed during the assigned month or the following two months. All addresses mailed a questionnaire for which no response is received during the assigned month and which have an available telephone number are sent to the computer-assisted telephone interviewing (CATI) staff which attempts interviews during the following month. After the CATI month, a subsample of the cases with unmailable addresses and mailable addresses for which neither a completed questionnaire has been received nor a CATI interview completed, is selected for computer-assisted personal interviewing (CAPI) in the third month. Each GQ sample is assigned to a month and in most GQ facilities six weeks are allowed for collection of data by personal interview only.

Estimates are calculated annually for specified geographical areas and data is cumulated over three different time periods: one year for areas of at least 65,000 population, three years for areas of at least 20,000 population, and five years for all specified areas. The multi-step weighting procedure used for HUs (Asiala (2006)) is performed by *estimation areas* which are single counties or groups of small counties. HU selection weights are first adjusted for CAPI subsampling and non-response. They are then adjusted so that the weighted estimates of the number of persons by demographics (sex, age, race, and Hispanic origin) and by HUs are equal to the intercensal estimates. The intercensal estimates are produced by the Census Bureau's Population Estimates Program (U.S. Census Bureau (2006b)). For single year estimates, the intercensal estimates as of July 1 of the current year are used as controls; for the 3(5)-year estimates the averages of the intercensal estimates across the 3(5) years are used as the controls.

Preceding full implementation in 2005, the ACS had been in a demonstration phase since 1996. During that period GQ weighting and estimation were carried out only once, for calendar year 1999 when there were 36 counties in sample. At that time GQ stratification and sampling were done separately for each county. For the full GQ implementation of ACS starting in 2006,

[1] This report is released to inform interested parties of research and to encourage discussion. The views expressed on statistical issues are those of the authors and not necessarily those of the U.S. Census Bureau.

GQs are sorted by type within state and selected across the whole state. The data products plan includes the calculation of 2006 ACS estimates for institutional and noninstitutional GQ types at the national level and, if shown to be feasible, for states and large counties in future years. See U.S. Census Bureau (2006a) for a list of GQ types.

For 1999 the GQ person weighting was carried out at the county level, and estimates by demographics were controlled together with the persons in HUs to the intercensal estimates of county population totals. There was no other choice of geography because of the small number of counties in sample, and GQ persons could not be controlled alone because of the small GQ populations and resulting sample sizes in most counties. Now that every county in the nation is in sample, there is the possibility of weighting GQ persons by states or groups of counties in a state and controlling GQ person estimates, either by themselves or together with HU person estimates, for these geographies.

This research compares several alternative methods for controlling GQ-person estimates (by demographics or major GQ types) to their intercensal estimates by analyzing how closely selected GQ person estimates for states and counties match their "true" values under each method. These comparisons were derived from a simulation study using Census 2000 data, and the results used to inform the decision on how to incorporate GQ persons with HU persons in the raking ratio control process used for the 2005 ACS HU person estimates.

The focus of this research is the investigation of five options for controlling GQ person weights to intercensal estimates:

C1) no control for GQ person estimates;
C2) control GQ person demographic estimates at the state level by themselves;
C3) control GQ and HU person demographic estimates together for counties;
C4) control GQ and HU person demographic estimates together at the state level;
C5) control GQ person major type estimates at the state level.

It was not practical to use all 50 states and the District of Columbia for this study due to the amount of computation and analysis that would be required. Instead, fourteen states were chosen based on their GQ populations: AZ, CA, CO, FL, HI, LA, MS, NV, NJ, NY, PA, RI, TX, and WV.

2. GQ Distribution and Sampling

The distribution of GQ persons across areas differs substantially from that of HU persons. A high percentage of the GQ population is concentrated in large GQs that contain hundreds of people, and these large GQs are concentrated within a subset of all counties. In fact, two-thirds of all counties have no GQ population and about 70 percent of all GQ persons are in counties with population over 100,000. Thus many estimation areas have very small GQ populations. Also, the people in different major GQ types have differing distributions of demographic characteristics.

GQ sampling is conducted at the state level, resulting in a larger variability in county GQ sample sizes and the major types of GQs selected from a county across years than if sampling were done by county. Counties with very small GQ populations may frequently not have any sample selected in a given year. However, this allows the overall and major type state sample sizes to be less variable across years.

As a result of these factors it does not make sense to attempt to control GQ persons by themselves at the county level or to base comparisons primarily on single year county estimates. Instead, 3- and 5-year estimates for states, large counties, and small counties are evaluated separately.

3. Data Used in the Study

3.1 Person Data Sources

Data for both GQ and HU persons were obtained through simulation of ACS samples and use of 100% data from Census 2000 records. This was necessary to obtain GQ data because (1) there is little GQ data from ACS itself and (2) the differences between the GQ sampling procedures for the Census 2000 long form and the 2006 ACS are too large to allow us to use GQ sample data from Census 2000.

The data files constructed for the simulations were derived from three sources.

a. Census 2000 100% data from all GQ persons, both those in the long form sample and those receiving the short form;
b. Census 2000 100% data from the HU long form sample;
c. One thousand ACS samples of GQ persons previously simulated from the Census 2000 GQ universe by the ACS Design Branch (ACSDB).

3.2 Simulating ACS 100% Data

The research data sets were simulated in two steps, one for GQ persons and one for HU persons, and then combined.

GQ Sample. 100 of the 1000 GQ samples simulated by ACSDB were selected at random, each one of them representing a separate year of sample. For each sample hit in a large GQ (>15 persons in Census 2000), a set of 10 persons was selected for inclusion in the ACS persons sample. In small GQs (≤ 15 persons in Census 2000) all persons were included. The sample persons in each small GQ or selected set of 10 persons in each large GQ sample hit were assigned to a panel month using the 2005 ACS GQ sampling specifications. These sample persons were assigned Census 2000 100% data from persons in the selected GQs, with the exception of those persons in GQ type 501 (college dormitories/fraternities/sororities) assigned to the panel months June, July, and August. This excepted 501 sample represents months of the year when we will assume students will not be in school and available for interviews.

HU Sample. For each county a systematic 15% sample of the Census 2000 long form sample HUs was selected. The 100% data from all persons in these HUs represent these same variables for a single year of ACS HU sample. The single HU sample was combined with each of the 100 GQ samples to represent 100 years of HU plus GQ sample for ACS.

3.1 Seasonality in the GQ Population

During collection of GQ data for ACS, certain GQ types will exhibit consistent patterns of varying numbers of people residing in them at different times of the year. These patterns are referred to as *seasonality*. Since during the course of this project we had no information on seasonality for specific GQs, other than those housing college students, the only GQ seasonality that was simulated was for type 501, college dormitories/fraternities/sororities. For the months June, July, and August this type is treated as having zero population, while for the other months each of these GQs has the population present at the time of Census 2000 – April 1, 2000. The effect this seasonality has on the GQ estimates is included in the study.

4. More About the Weighting Options

Some basic details about the options are presented here. First note that this study did not attempt to simulate nonresponse or the weighting steps prior to the application of controls. In actual implementation the selected procedure would be applied after nonresponse adjustment. All controls are calculated from Census 2000 to be consistent with the sources of the data.

1) C1 can be thought of as the weighted GQ sample estimate. It uses the basic GQ sampling weight of 40 as the person weight. C1 estimates are not controlled to any person controls. HU weighting is not needed to evaluate this option.

2) C2 weights the GQ population to GQ person demographic controls at the state level. The demographic cells and collapsing rules used for C2 are the same as those used for the 2003-2005 ACS weighting of the HU population, except that the cells are defined at the state level and only include the GQ population. Each GQ person has the weight 40 before the controls are applied. HU weighting is not needed to evaluate this option.

3) C3 weights the combined HU and GQ populations to total person demographic controls at the county level. The demographic cells and collapsing rules used for C3 are the same as those used for the 2003-2005 ACS weighting of the HU population, except that the cells include both the HU and GQ populations. Note that for most counties the C3 weighting will mainly be driven by the HU population, since the HU population is usually much larger than the GQ population. Each GQ person has the weight 40 before the controls are applied. Each person in a given HU has a weight of 1/(ACS HU sampling rate for its block) before the controls are applied, and these weights can be 53.33, 40.00, 26.67, or 13.33.

4) C4 weights the combined HU and GQ populations to total person demographic controls at the state level, rather than the county level that C3 uses. Everything else stated for C3 also holds for C4.

5) C5 weights the GQ population to the seven Census 2010 major GQ type controls at the state level. The definitions for the major types are discussed below and given in Table 1. No collapsing is performed as the controls are large except for three cases. Each GQ person has the weight 40 before the controls are applied. HU weighting is not needed to evaluate this option.

The two options we initially focus on in the comparisons are C2 and C3, as they are the ones most likely of C1 through C4 to be used for the initial implementation of ACS GQ weighting. Since controls are currently applied for HU persons by estimation

area, it is unlikely that there would be a change to state level controls used in C4 based solely on the results of this study without extensive discussions of the policy implications of such a change. Also, ACS would not consider changing to C1 unless further research shows that using population estimates as controls for GQ persons introduces such biases that using no controls for GQ persons would be preferable. The recommended choice between C2 and C3 is then compared with C5 to reach a final recommendation.

4.1 Demographic Cells

Controlling by demographics for C1 through C4 uses 26 cells defined by combinations of age and gender for each of six race/Hispanic origin groups: Hispanic, and non-Hispanic American Indian or Alaska Native, Asian, Native Hawaiian or Pacific Islander, Black, and White. The thirteen age groups are 0-4, 5-14, 15-17, 18-19, 20-24, 25-29, 30-34, 35-44, 45-49, 50-54, 55-64, 65-74, and 75+.

4.2 Major GQ Types

The three-digit GQ types from Census 2000 are used in this study as the basis for the control cells in C5 and for comparison of the options. For the comparison of C1 through C4 the nine major types 1-9 are defined as they were in Census 2000, by the first digit of the three-digit type code, as 1=prisons/jails, 2= juvenile facilities, 3=nursing homes, 4=hospitals, 5=college housing, 6=military barracks/ships, 7=temporary shelters, 8=groups homes, and 9=other GQs. For the C5 weighting seven major types are used, where major types 7, 8, and 9 from Census 2000 have been combined into a single major type. With minor exceptions, these are the definitions of major GQ types planned for use with Census 2010. The revised seven major types are used for comparing C5 to the recommended choice between C2 and C3.

5. Evaluation Measures for Comparing the Control Options

The 1-year, 3-year cumulated, and 5-year cumulated estimates were evaluated for the five options. Option C1 was used more as a benchmark than as a competing option, to see how much the other options changed the estimates and their properties. As all data are selected from Census 2000 and the simulation treats the population as fixed across the 100 samples, Census 2000 100% counts are used as the intercensal estimates for all years. Because the same HU sample and set of controls are used with each year of simulated data, the variability in the GQ estimates across years in options C3 and C4 results solely from the annual GQ samples. Thus they can be compared directly with the other options which have this property since they don't combine GQ and HU data.

An important factor that will be used in recommending between C5 and the best of C2 and C3 is that the intercensal estimates for major GQ types are considered to be more reliable than those for GQ demographics. So for C2 or C3 to be recommended it must be demonstrably better than C5.

A set of marginal demographic characteristics for which it is desirable that the GQ estimates are close to their controls was selected for evaluation: female, male, Hispanic, non-Hispanic, white, black, and ages 0-17, 18-29, 30-54, and 55+. The corresponding abbreviations of fe, ml, hi, nh, wh, bk, a1, a2, a3, and a4 are used on the Boxplots in Appendices 2, 3, 5, and 6. The selection was based somewhat on demographic groupings that appear in the annually published tables of ACS estimates and the demographic characteristics of the persons in different GQ types, as well as those for which we expect varying coverage rates. In addition, estimates of the GQ population for the major GQ types were evaluated. For each demographic characteristic and major GQ type, weighting alternative, and year, the deviation between the estimate and its control was calculated. The analyses are based on (1) on how closely the state and county GQ estimates of demographics and major types approximate their Census 2000 counts, and (2) the variability of the estimates around their mean values. The percent mean absolute deviation (PMAD), the coefficient of variation (CV), and the percent root mean squared error (PRMSE) of each set of estimates are the measures used to compare the alternatives.

5.1 Percent Mean Absolute Deviation

Consider 1-year estimates. Let y_{ci} be the 'true' value (from Census 2000) for target cell or major type c in geographic area (state or county) i and $\hat{y}_{sci}^{o1}$ be its estimate for control option o and simulation (year) s. The mean absolute deviation (MAD) for a given cell is the mean across the 100 simulated years of $|\hat{y}_{sci}^{o1} - y_{ci}|$ and the PMAD is $100*MAD/y_{ci}$. Similarly let $\hat{y}_{sci}^{o3}$ and $\hat{y}_{sci}^{o5}$ denote the 3-year and 5-year estimates for target cell or major type c in geographic area i and control option o, where s is now the latest year of data used in the estimate. Their MADs and PMADs are based on 98 and 96 estimates, respectively.

5.2 Percent Root Mean Squared Error

The MSE is defined like the MAD, the only difference being that the square of the individual deviations $(\hat{y}_{sci}^{o1} - y_{ci})^2$ are used rather than their absolute values. Thus larger deviations contribute more to the MSE than they do to the MAD. For the convenience of comparisons the MSE is converted to units similar to those for the PMADs and the CVs by using the percent root mean squared error defined as PRMSE = $100 * \sqrt{MSE} / y_{ci}$.

5.3 Coefficient of Variation

The CV measures the variability of an estimator relative to its mean value and is defined for a single year estimate as $100 * \sqrt{\sum_{s=1}^{100} (\hat{y}_{sci}^{o1} - \bar{y}_{ci}^{o1})^2 \Big/ 99} \Big/ \bar{y}_{ci}^{o1}$, where $\bar{y}_{ci}^{o1} = \sum_{s=1}^{100} \hat{y}_{sci}^{o1} \Big/ 100$. For the 3-year (5-year) estimates the sum over s goes from 3(5) to 100, this sum is divided by 97 (95), and the divisor for the mean is 98 (96). The CV puts the standard deviations for estimators of different quantities on the same scale so that they can be compared.

Each of the statistics MAD, PMAD, CV, MSE, and PRMSE is a valid measure of the quality of an estimate. The CV differs from the others in that it is a measure of variability across years around the mean of the annual estimates, while the others measure the variability around the 'true' value in various ways. It is included as an important part of this study as it is a primary measure of the quality of ACS estimates when comparing them with estimates from the Census 2000 long form.

The analysis in this report will focus on the percentage measures as these put the measures for different quantities on the same scale.

6. Analysis – C1 through C4

Based on the method that determined the requirement for the HU population in an area to have a population of at least 65,000 for ACS to produce annual estimates, we use a requirement of 55,000 GQ persons in this study. The basic reason for the smaller size requirement is that there is no computer assisted personal interview subsampling for GQs. Four of the states in the study – HI, NV, RI, WV – would not receive annual GQ estimates using this requirement for the GQ population. We also use 18,000 as the corresponding minimum GQ population required for a state or county to receive 3-year estimates, with all smaller counties eligible for only 5-year estimates. Due to these thresholds and the options being applied at both the state and county levels, we will summarize the results separately for (a) the 14 states using 3-year estimates, (b) the 46 'large' counties with GQ populations greater than 18,000 using 3-year estimates, and (c) the remaining 'small' counties with GQ populations less than 18,000 using 5-year estimates.

It seems obvious that C2 will, in general, produce GQ estimates of demographic characteristics that are closest to their state control totals. But during the control process for many states there will be collapsing of the original full set of adjustment cells, which will result in the GQ estimates not equaling their controls for any pre-specified set of cells. It is also clear for options C3 and C4 that, for the initial or collapsed sets of adjustment cells, the separate estimates for HUs or GQ will rarely equal their control totals. However, we do not know which of these three options will produce county-level estimates of GQ demographic characteristics closest to their control totals. Neither do we know what to expect for estimates of major GQ types, since they are not being controlled for in these options and it is unknown how the seasonality of major type 5 (consisting only of type 501) will affect them. The results of the comparisons of these four weighting options are summarized in the remainder of this section.

6.1 Demographics

The values for PMADs and PRMSEs in Table A1.1 confirm the supposition that C2 estimates of demographics by state are much closer to their true values than are those for the other options. This is because C2 controls to these values directly. In fact, all annual deviations would be zero if there were no collapsing of cells. As an example of this, Table A1.1 shows that annual deviations for Hispanics and non-Hispanics are always zero in all states, and this is because there is no collapsing needed across those two categories. The CVs in Table A1.1 show that they are also consistently smaller for C2 than for the other options. Now we look further at the results to make sure that C2 does not distort demographic estimates for counties or major type estimates by county or state.

Appendix 2 gives Boxplots of the differences between the PMADs and CVs for C2 and C3 (C2 –C3) in the 46 large counties. They show that the distributions of the PMADs for demographics are much the same for C2 and C3, with the C2 PMADs usually being slightly smaller and their means always smaller for C2. The

age 18-29, female, non-Hispanic, and white categories have mean values most in favor of C2. Most differences have a magnitude less than 5%, with those > 6% all in favor of C2. The distributions of the CVs are very similar, with C3 having smaller CVs slightly more often than C2. Most differences in CVs are < 2.5%. The PRMSE comparisons are very similar to those for the PMADs in each of the Appendices 2, 3, 5, and 6, so are omitted.

Boxplots for differences between C2 and C3 in small counties are given in Appendix 3. Variability of the PMAD can get very large when estimating small population totals, for either demographics or major types. As a consequence, to see more detail in the plots two Boxplots are used, one for populations > 100 and one for populations ≤ 100. The results are mixed for PMADs, with no clear advantage to either C2 or C3, while C3 tends to have slightly lower CVs.

6.2 Major Types

Looking at the PMADs for persons in the major GQ types across all 14 states in Table A1.2 shows that their distributions for C2 and C3 are about the same for five of the seven major types. For all states but Hawaii, C2 has a much smaller PMAD for major type 5 and C3 has a much smaller PMAD for major type 6. This is due to the seasonality in the major type 5 population and the similarity of its age distribution to that of the major type 6 population, as described in the following paragraphs.

We treat GQ type 501, college dormitories etc., as having no population in June-August. When adjusting the demographic combinations that contain a large proportion of the dorm population to the year-round-based controls with C2, they must be adjusted upward substantially. Persons between the ages of 18 and 24 in other GQ types will be affected by this adjustment in the same manner as college students in type 501. As a result, the persons in major GQ types other than type 5 will get larger upward adjustment factors rather than the small factors they would have gotten if they had been adjusted by themselves, tending to result in age 18-24 totals larger than their individual controls. Since major type 6 is the other main type with a large proportion of its population in the 18-24 age group, its total population estimate tends to be affected in this way. The resulting annual deviations are larger than the deviations before adjustment, either because the type 6 totals started below their controls and were adjusted to be above them but with larger deviations, or they started above the controls and were pulled further above.

When the HU and GQ populations are controlled together by county for C3, both the survey estimate and the control tend to be dominated by the HU population. This means that the adjustment ratio will usually be very close to what it would be for the HU population alone. There will be exceptions to this in some counties with smaller proportions of their total population in HUs. When summing the controlled estimates across counties to get the state estimates, the overall adjustment will, except possibly in rare instances, be dominated by the HU population. Consequently, the adjustment for the dorm population and persons in other GQ types with similar demographic characteristics will be much smaller for C3 than C2. So for C3 the seasonal dorm population will be adjusted slightly upward toward its true value but the annual deviations will remain quite large; the non-seasonal major type 6 population will be adjusted slightly toward or away from its true value, with the annual deviations remaining much smaller than those for the major type 5 population. The result is much larger PMADs for the major type 5 population than for the major type 6 population.

These relationships between the estimates for major types 5 and 6 are a result of inconsistency between the *current residence* rule used for ACS data collection and the *usual residence* rule used for the intercensal estimates applied as demographic weighting controls that ignore GQ type. The notable differences between estimates and controls resulting from this inconsistency are much more widespread for GQ estimates than they are for HU estimates due to the large proportion of the GQ population living in major type 5 and the prevalence of this major type throughout the country.

For state CVs the C3 values are usually slightly lower than the C2 values, with most differences between them less than 2.5%.

The distributions of the PMADs for type across the large counties (Appendix 2) are very similar, with neither C2 nor C3 being favored and most differences less than 10% in magnitude, except for types 5 and 6 which behave in a similar manner as they did for states. The distributions of the CVs are very similar to those for large county demographics, with C3 having smaller CVs slightly more often than C2. Most differences in CVs are < 2.5%.

The results for small counties (Appendix 3) are much the same as they were for demographics. They are mixed for PMADs, while C3 tends to have somewhat lower CVs.

6.3 Summary

As a whole, the results suggest that C2 is preferred over C3 because of its notably smaller PMADs for state demographics and slightly smaller PMADs for large county demographics. The remaining PMAD comparisons show little difference between C2 and C3. PRMSE comparisons give very similar results. The CVs do not show a noticeable favoritism for C3 that would make us doubt the preference for C2. For state demographics the CVs are consistently lower for C2 while for the other comparisons they favor C3 only slightly.

7. Analysis – C2 vs. C5

As stated previously, there is a preference for using controls by type rather than by demographics. Thus the comparison of C2 and C5 determines if there are results that strongly suggest a preference for C2 over C5, and if not, then C5 will be recommended for use.

Note that for C5 there are only 7 marginal totals being controlled to by type but for C2 there are 26 cells being controlled to for each race/Hispanic origin category. Consequently, for most states there will be cell collapsing required for C2 but no collapsing of marginals required for C5. So the state measures by type for C5 will usually be 0.0 and by demographics for C2 will be greater than 0.0, so we can't rely on comparing these measures to evaluate the two options. Rather, we would like to find an option that fits both the major type and demographic controls closely, with an emphasis on the major type controls. So this comparison focuses on (a) the size of the measures for major type when controlling by demographics versus (b) the size of the measures for demographics when controlling by major type.

The tables in Appendix 4 compare the state measures for options C2 and C5. As noted previously, most of the C5 measures for major type are 0. When comparing across the demographics and major type measures, C5 usually has smaller measures for demographics than C2 has for major types. So C5 would be the preferred option if we considered only state results.

Next we compare the measures for C2 and C5 at the county level. Appendix 5 contains Boxplots of the differences C5 – C2 of the three measures for demographics and major types in large counties. The same set of Boxplots for small counties are given in Appendix 6.

7.1 Demographics

For the large counties the means of the PMAD differences are close to 0, with most individual differences less than 4%. CVs also have means near 0 with two differences greater than 10% in favor of C2. PMADSs for small counties take a much larger range of values than for small counties but their mean values are close to 0. The distributions of both these measures are fairly symmetric about 0 and don't favor either option overall. The differences in CVs fall mostly between -10% and 10% and have means very close to 0.

7.2 Major Types

For large counties the mean differences of the PMADs are close to 0 but the three means farthest from 0 are due to smaller C5 PMADs. There are a few differences greater than 10%, most having smaller C2 values. The means of the CV differences are also close to 0. Most differences are less than 4% with a few differences greater than 9% favoring C5. Again PMADSs for small counties take a much larger range of values than for large counties but their mean values are close to 0. However, there are several counties for which C2 has notably smaller PMADs for major type 5 and several other counties for which C5 has notably smaller PMADs for major type 6. The differences in CVs fall mostly between -8% and 8% and have symmetric distributions with means very close to 0.

7.3 Summary

As a result of C5 being preferred for states and there being little difference between the county-level distributions of the measures for C2 and C5, C5 is recommended as the option to use for the 2006 ACS GQ weighting.

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Appendix 1

Evaluation Measures for States – 3-year Estimates

Table A1.1. Measures for Demographic Characteristics

Arizona

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	72720	3.68	0.24	0.92	1.51	4.13	0.30	1.18	1.77	1.96	0.22	1.18	1.17
Female	37130	7.78	0.46	7.41	7.87	8.76	0.59	7.96	8.35	4.36	0.43	3.13	3.02
Hispanic	24550	4.71	0.00	1.86	2.64	5.64	0.00	2.30	3.13	4.36	0.00	2.07	2.12
Non-Hispanic	85300	5.44	0.00	2.97	3.89	5.68	0.00	3.13	4.01	1.73	0.00	1.02	1.00
White	75805	5.35	0.27	4.04	4.46	5.53	0.32	4.11	4.53	1.48	0.32	0.74	0.83
Black	10224	4.48	0.70	3.91	1.87	5.81	0.84	4.47	2.28	4.35	0.82	2.40	2.25
age 0-17	6020	11.85	0.53	6.79	6.88	14.60	0.66	8.48	8.63	14.32	0.64	7.56	7.73
age 18-29	41593	11.12	0.13	6.26	7.44	11.29	0.18	6.39	7.52	2.15	0.18	1.35	1.21
age 30-54	36350	3.21	0.11	1.87	1.80	4.21	0.13	2.31	2.24	3.68	0.13	1.87	2.17
age 55+	25887	2.43	0.11	1.79	1.57	2.96	0.16	2.20	1.99	2.85	0.13	1.57	1.58

California

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	528567	2.85	0.01	0.47	0.29	2.92	0.01	0.56	0.37	0.62	0.01	0.38	0.35
Female	291187	6.59	0.02	5.27	6.48	6.65	0.02	5.30	6.50	0.99	0.02	0.59	0.58
Hispanic	192560	2.54	0.00	1.37	1.50	2.83	0.00	1.54	1.66	1.59	0.00	0.86	0.91
Non-Hispanic	627194	4.74	0.00	1.71	2.69	4.76	0.00	1.73	2.70	0.49	0.00	0.29	0.25
White	495036	4.43	0.18	2.67	3.45	4.50	0.23	2.71	3.48	0.86	0.23	0.47	0.45
Black	133748	1.79	0.16	3.85	3.75	2.14	0.21	3.92	3.82	1.43	0.19	0.73	0.68
age 0-17	46188	5.32	0.00	3.82	4.66	6.76	0.00	4.58	5.40	5.45	0.00	3.12	3.12
age 18-29	307768	9.72	0.00	4.61	6.05	9.77	0.01	4.63	6.07	1.07	0.01	0.47	0.51
age 30-54	265090	0.88	0.00	2.10	1.97	1.14	0.01	2.21	2.06	1.08	0.01	0.65	0.60
age 55+	200708	1.24	0.00	1.51	2.03	1.54	0.00	1.71	2.18	1.39	0.00	0.84	0.81

Colorado

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	65453	4.90	0.13	0.86	2.11	5.20	0.17	1.02	2.29	1.84	0.15	0.96	0.92
Female	37502	9.09	0.23	7.01	9.10	9.60	0.29	7.16	9.20	3.38	0.26	1.56	1.50
Hispanic	16451	4.09	0.00	3.35	2.02	5.06	0.00	4.00	2.34	4.21	0.00	2.52	2.31
Non-Hispanic	86504	7.08	0.00	3.88	5.60	7.18	0.00	3.95	5.63	1.32	0.00	0.75	0.67
White	82461	7.09	0.28	4.79	5.89	7.23	0.34	4.88	5.96	1.57	0.34	0.97	0.90
Black	11194	4.24	0.69	5.23	2.48	5.23	0.84	5.95	3.02	5.14	0.84	2.75	2.61
age 0-17	4709	13.41	0.53	7.51	8.24	16.61	0.66	9.35	10.20	16.27	0.66	9.07	9.76
age 18-29	46440	12.62	0.11	6.65	8.94	12.71	0.16	6.73	8.98	1.74	0.15	1.11	0.95
age 30-54	26748	3.29	0.20	3.44	1.76	4.66	0.25	3.88	2.27	4.22	0.21	2.09	2.26
age 55+	25058	3.16	0.23	2.81	3.05	3.53	0.28	3.29	3.44	3.41	0.18	1.77	1.69

Florida

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	241149	2.76	0.02	1.46	0.57	2.94	0.03	1.59	0.71	1.08	0.02	0.61	0.57
Female	147796	5.06	0.03	4.59	5.21	5.20	0.04	4.65	5.25	1.28	0.04	0.74	0.73
Hispanic	49771	2.82	0.00	3.24	1.52	3.55	0.00	3.62	1.90	2.82	0.00	1.61	1.80
Non-Hispanic	339174	3.83	0.00	1.43	2.48	3.86	0.00	1.47	2.50	0.50	0.00	0.31	0.27
White	260296	3.90	0.14	2.15	3.10	3.99	0.17	2.20	3.14	0.89	0.14	0.50	0.52
Black	110192	2.63	0.15	2.12	0.86	3.05	0.18	2.30	1.04	1.97	0.18	0.89	1.02
age 0-17	16959	4.82	0.20	3.34	4.01	6.24	0.26	4.07	4.75	6.11	0.26	3.80	3.44
age 18-29	129782	10.40	0.04	4.31	5.97	10.46	0.05	4.36	6.01	1.30	0.05	0.65	0.66
age 30-54	116156	1.38	0.04	3.53	1.55	1.74	0.05	3.65	1.80	1.74	0.05	0.87	0.92
age 55+	126048	1.00	0.03	1.21	1.74	1.24	0.03	1.37	1.86	1.21	0.03	0.68	0.65

Hawaii

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	24401	3.98	0.39	5.27	4.56	4.76	0.47	5.86	5.26	4.74	0.43	2.52	2.57
Female	11381	8.06	0.84	4.92	4.82	10.29	1.01	6.21	6.16	8.36	0.93	4.82	4.78
Hispanic	3079	10.67	0.00	5.54	5.19	12.84	0.00	6.98	6.55	12.83	0.00	6.56	6.55
Non-Hispanic	32703	2.98	0.00	2.74	2.07	3.73	0.00	3.10	2.48	2.79	0.00	1.44	1.42
White	16380	3.50	0.61	5.80	4.83	4.44	0.74	6.14	5.21	4.16	0.72	1.91	1.87
Black	3088	9.62	2.60	5.77	4.64	11.44	3.09	6.82	5.69	10.56	2.75	4.36	4.64
age 0-17	1339	27.03	2.72	15.80	15.55	32.64	4.71	19.36	19.23	34.36	4.23	18.67	18.82
age 18-29	19006	5.22	0.26	3.33	2.59	5.71	0.35	3.66	2.90	2.44	0.35	1.55	1.47
age 30-54	8389	7.48	0.49	5.33	5.30	9.33	0.61	6.60	6.65	9.23	0.52	4.97	5.07
age 55+	7048	5.28	0.37	2.66	2.97	6.79	0.44	3.30	3.60	6.57	0.44	3.27	3.52

Louisiana

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	84940	2.90	0.13	1.60	0.95	3.35	0.21	1.85	1.21	1.82	0.19	0.94	1.01
Female	51025	7.74	0.21	6.33	7.55	8.21	0.34	6.57	7.74	2.99	0.32	1.87	1.82
Hispanic	3774	11.13	0.00	5.65	5.33	13.45	0.00	7.18	6.72	11.15	0.00	6.21	5.67
Non-Hispanic	132191	4.56	0.00	1.52	3.24	4.60	0.00	1.68	3.26	0.62	0.00	0.73	0.31
White	65657	4.61	0.18	2.96	4.23	4.99	0.22	3.16	4.35	2.00	0.22	1.13	1.05
Black	67323	4.49	0.14	1.00	2.10	4.83	0.18	1.29	2.28	1.85	0.17	1.29	0.95
age 0-17	5595	14.73	0.63	8.27	7.30	17.89	0.80	10.13	9.20	17.84	0.79	8.87	9.23
age 18-29	53614	12.04	0.14	4.50	7.43	12.17	0.18	4.60	7.49	2.01	0.17	1.00	1.04
age 30-54	39424	1.88	0.15	2.38	1.41	2.37	0.19	2.70	1.76	2.36	0.18	1.26	1.37
age 55+	37332	2.57	0.10	1.88	2.38	3.13	0.12	2.63	2.95	3.07	0.12	2.01	1.86

Mississippi

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	55610	6.42	0.17	1.78	2.41	7.09	0.22	2.09	2.88	3.24	0.16	1.77	1.64
Female	39804	9.43	0.24	4.34	7.07	10.15	0.31	4.72	7.37	4.16	0.23	1.95	2.22
Hispanic	2533	10.24	0.00	28.58	16.90	13.01	0.00	29.41	18.49	12.58	0.00	5.39	6.42
Non-Hispanic	92881	7.74	0.00	1.99	4.93	7.77	0.00	2.17	4.94	0.78	0.00	0.89	0.33
White	49401	8.53	0.22	3.09	5.51	8.77	0.28	3.35	5.60	2.24	0.22	1.35	1.04
Black	43700	6.91	0.17	1.29	4.17	7.29	0.20	1.72	4.34	2.49	0.20	1.60	1.25
age 0-17	3834	13.74	1.48	8.97	8.82	16.10	1.92	10.81	10.66	16.10	1.34	9.50	9.45
age 18-29	47688	14.92	0.16	5.41	9.63	14.99	0.20	5.55	9.66	1.66	0.20	1.31	0.75
age 30-54	19671	3.85	0.32	7.37	3.32	5.26	0.43	7.91	4.06	5.27	0.36	2.75	2.59
age 55+	24221	3.61	0.13	1.86	1.40	4.36	0.20	2.25	1.82	4.34	0.20	1.98	1.79

Nevada

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	24014	9.19	0.70	5.20	6.97	9.44	0.91	5.35	7.07	2.38	0.64	1.32	1.25
Female	9661	17.30	1.74	18.72	19.68	18.66	2.26	19.12	20.05	8.45	1.62	4.77	4.76
Hispanic	4455	11.51	0.00	5.30	6.86	12.84	0.00	6.83	8.73	12.55	0.00	6.28	7.19
Non-Hispanic	29220	12.57	0.00	9.99	11.40	12.78	0.00	10.11	11.47	2.63	0.00	1.68	1.47
White	23978	13.23	0.72	11.77	13.05	13.31	0.85	11.80	13.08	1.61	0.50	0.93	0.97
Black	6453	7.89	0.77	2.86	3.24	8.76	0.99	3.54	3.89	6.65	0.89	3.46	3.49
age 0-17	1944	30.64	3.38	28.57	30.50	32.73	3.70	29.59	31.38	17.85	1.64	10.78	10.59
age 18-29	10391	8.97	1.94	4.37	5.82	9.99	2.07	5.05	6.37	4.84	0.70	2.64	2.75
age 30-54	13417	7.12	0.65	3.51	5.62	7.82	0.74	4.13	5.95	3.67	0.38	2.72	2.07
age 55+	7923	17.85	0.73	20.49	20.49	18.36	0.87	20.61	20.61	5.21	0.59	2.89	2.79

New Jersey

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	110292	4.30	0.11	0.69	1.55	4.64	0.14	0.89	1.74	1.81	0.09	0.82	0.90
Female	84529	7.92	0.14	4.48	6.70	8.14	0.18	4.58	6.78	2.04	0.12	1.00	1.09
Hispanic	19815	5.53	0.00	2.53	2.51	6.90	0.00	3.13	3.13	5.75	0.00	3.08	3.04
Non-Hispanic	175006	6.06	0.00	2.00	4.09	6.11	0.00	2.03	4.11	0.74	0.00	0.36	0.41
White	122388	6.74	0.23	3.64	5.40	6.82	0.29	3.68	5.43	1.14	0.21	0.57	0.64
Black	56377	2.83	0.32	3.02	0.85	3.21	0.38	3.18	1.02	1.71	0.31	0.97	0.84
age 0-17	6187	12.59	0.66	8.30	8.60	15.19	0.83	10.47	10.72	15.29	0.63	9.38	9.38
age 18-29	71003	15.24	0.07	6.97	11.15	15.29	0.10	6.99	11.17	1.42	0.09	0.63	0.75
age 30-54	51576	2.47	0.07	3.87	3.04	3.01	0.09	4.19	3.37	3.01	0.09	1.69	1.61
age 55+	66055	2.13	0.03	1.17	1.29	2.52	0.04	1.48	1.69	2.50	0.03	1.48	1.49

New York

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	323248	6.48	0.02	1.52	3.50	6.54	0.02	1.63	3.54	0.94	0.02	0.59	0.56
Female	257213	9.03	0.02	6.47	8.37	9.10	0.03	6.49	8.39	1.21	0.03	0.61	0.67
Hispanic	72341	3.48	0.00	1.21	0.87	4.09	0.00	1.41	1.18	2.22	0.00	1.05	1.17
Non-Hispanic	508120	8.20	0.00	4.37	6.45	8.21	0.00	4.38	6.45	0.41	0.00	0.29	0.24
White	367099	9.25	0.19	6.20	7.73	9.28	0.23	6.21	7.74	0.91	0.15	0.47	0.47
Black	148243	2.89	0.25	1.49	0.85	3.29	0.32	1.70	1.05	1.65	0.25	0.82	0.92
age 0-17	31133	4.49	0.06	2.80	2.90	5.77	0.08	3.58	3.75	5.75	0.08	3.58	3.26
age 18-29	241483	17.52	0.02	9.17	12.93	17.53	0.03	9.18	12.94	0.74	0.02	0.42	0.36
age 30-54	141374	1.63	0.03	2.30	1.69	2.02	0.04	2.54	1.95	1.90	0.03	1.07	1.03
age 55+	166471	0.89	0.02	1.60	2.00	1.08	0.02	1.70	2.08	1.03	0.02	0.59	0.61

Pennsylvania

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	219229	7.91	0.03	2.97	4.43	8.03	0.03	3.07	4.49	1.47	0.03	0.83	0.77
Female	214072	9.51	0.03	6.51	7.55	9.58	0.03	6.54	7.58	1.29	0.03	0.62	0.65
Hispanic	18507	7.26	0.00	5.71	2.11	8.12	0.00	5.99	2.61	4.52	0.00	1.72	2.30
Non-Hispanic	414794	8.78	0.00	5.18	6.18	8.79	0.00	5.19	6.19	0.41	0.00	0.30	0.26
White	334531	9.48	0.12	6.58	7.42	9.51	0.15	6.60	7.44	0.95	0.15	0.57	0.56
Black	79043	3.89	0.26	2.42	0.85	4.42	0.35	2.64	1.05	2.19	0.27	1.03	1.04
age 0-17	16500	8.61	0.16	4.81	6.54	10.47	0.22	5.81	8.10	9.77	0.21	5.74	6.30
age 18-29	185833	19.80	0.03	11.90	13.86	19.81	0.04	11.91	13.86	0.87	0.04	0.47	0.43
age 30-54	79932	1.72	0.07	2.65	1.48	2.10	0.09	2.81	1.73	2.01	0.08	0.92	0.98
age 55+	151036	0.89	0.01	0.43	0.43	1.04	0.02	0.52	0.51	1.01	0.02	0.50	0.45

Rhode Island

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	18726	13.84	0.57	7.27	10.24	14.69	0.74	7.79	10.59	5.74	0.74	3.03	3.02
Female	20090	13.05	0.53	8.09	8.87	13.85	0.69	8.54	9.24	5.32	0.68	2.97	2.84
Hispanic	2396	11.16	0.00	5.28	7.20	14.87	0.00	6.51	8.67	12.42	0.00	5.93	6.03
Non-Hispanic	36420	13.67	0.00	8.36	9.72	13.72	0.00	8.38	9.74	1.29	0.00	0.64	0.71
White	32250	13.40	0.25	8.49	10.21	13.53	0.30	8.56	10.26	2.15	0.30	1.20	1.19
Black	3452	10.79	3.09	3.09	3.32	12.87	3.81	3.88	4.37	9.57	2.53	3.88	4.35
age 0-17	864	25.24	4.35	14.19	13.38	31.73	5.27	18.00	17.27	32.03	4.85	18.22	17.48
age 18-29	22801	22.09	0.18	13.33	16.24	22.13	0.23	13.36	16.26	1.69	0.21	1.07	1.04
age 30-54	4487	6.92	1.15	4.61	4.50	9.15	1.46	5.67	5.54	8.81	1.45	5.65	5.22
age 55+	10664	2.27	0.36	1.36	1.36	2.81	0.52	1.70	1.67	2.81	0.51	1.35	1.26

Texas

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	370702	1.42	0.02	2.30	1.42	1.63	0.02	2.36	1.51	0.99	0.02	0.51	0.51
Female	190407	5.82	0.03	4.37	5.61	6.04	0.04	4.49	5.68	1.69	0.04	1.06	0.94
Hispanic	122958	2.52	0.00	1.95	1.11	3.11	0.00	2.26	1.42	2.58	0.00	1.27	1.42
Non-Hispanic	438151	3.14	0.00	0.52	1.20	3.21	0.00	0.72	1.27	0.72	0.00	0.55	0.43
White	368493	3.54	0.16	2.07	2.28	3.62	0.20	2.12	2.32	0.78	0.18	0.49	0.43
Black	141330	1.50	0.12	4.58	2.60	1.98	0.15	4.66	2.75	1.82	0.12	0.84	0.88
age 0-17	22281	6.47	0.18	3.81	4.59	8.06	0.21	4.61	5.60	7.90	0.13	4.49	4.90
age 18-29	231508	6.96	0.03	1.58	2.56	7.01	0.03	1.67	2.59	0.87	0.02	0.54	0.45
age 30-54	173470	0.90	0.02	3.00	1.81	1.13	0.03	3.11	1.90	1.03	0.03	0.81	0.57
age 55+	133850	1.05	0.01	1.16	1.51	1.33	0.01	1.37	1.62	1.33	0.01	0.76	0.63

West Virginia

Characteristic	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
Male	23041	7.75	0.67	3.90	4.59	8.47	0.83	4.42	5.01	3.81	0.54	2.18	2.10
Female	20106	10.34	0.76	10.14	10.41	11.06	0.95	10.31	10.61	4.37	0.62	2.11	2.28
Hispanic	668	18.01	0.00	8.85	10.72	24.16	0.00	10.54	13.25	24.68	0.00	9.21	13.07
Non-Hispanic	42479	9.03	0.00	6.98	7.35	9.16	0.00	7.08	7.40	1.67	0.00	1.29	0.96
White	36090	8.77	0.14	7.61	7.04	9.00	0.18	7.74	7.11	2.22	0.17	1.51	1.13
Black	6252	7.76	0.51	3.00	7.37	9.54	0.63	3.95	7.96	6.94	0.62	3.93	3.25
age 0-17	1771	35.22	1.28	21.59	22.08	42.45	1.75	25.47	26.10	39.41	1.62	21.42	22.66
age 18-29	19057	20.51	0.39	17.01	17.00	20.72	0.46	17.11	17.04	3.64	0.27	2.20	1.48
age 30-54	8518	7.78	0.66	5.60	3.73	9.30	0.79	6.86	4.49	9.34	0.44	4.87	4.47
age 55+	13801	5.14	0.26	2.23	2.95	7.03	0.32	4.29	3.57	7.03	0.25	3.93	3.53

Table A1.2. Measures for Major GQ Types

Arizona

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	45783	0.42	3.33	4.86	2.94	0.46	3.52	4.88	2.95	0.26	1.10	0.46	0.16
2	1955	5.63	6.43	3.93	3.39	7.44	8.32	4.98	4.50	7.47	7.49	4.90	4.20
3	13607	1.94	1.74	2.09	2.03	2.32	2.08	2.50	2.35	2.31	2.08	1.66	1.27
4	2423	10.20	6.37	7.26	6.87	12.21	7.77	8.88	8.38	12.13	7.68	8.74	8.32
5	17340	26.74	9.26	21.36	23.46	26.80	9.55	21.39	23.49	2.51	2.58	1.58	1.55
6	5256	2.07	13.19	1.33	3.91	3.37	13.45	1.67	4.26	3.38	2.33	1.47	1.67
7	5526	7.31	3.59	4.55	4.81	8.56	4.14	5.33	5.61	7.52	3.95	4.51	4.63
8	8058	5.00	2.34	4.22	3.89	6.27	3.11	5.04	4.67	5.47	2.89	3.54	3.51
9	9902	6.29	5.01	6.75	7.18	7.29	5.66	7.08	7.55	4.68	3.03	2.31	2.54

California

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	248516	0.14	1.60	3.53	3.35	0.20	1.68	3.54	3.35	0.20	0.50	0.25	0.12
2	17900	2.51	7.48	4.37	3.72	3.18	7.94	4.55	3.91	2.21	2.46	1.21	1.16
3	120724	3.35	4.10	2.57	2.08	3.42	4.17	2.59	2.11	0.66	0.72	0.35	0.34
4	26516	1.26	2.17	2.56	1.64	1.40	2.29	2.69	1.81	1.33	0.70	0.81	0.76
5	126715	24.88	10.23	20.04	22.23	24.88	10.24	20.04	22.23	0.47	0.56	0.35	0.27
6	58810	1.21	9.05	5.80	5.40	1.38	9.09	5.81	5.42	0.69	0.76	0.38	0.40
7	50271	2.26	0.71	0.69	0.90	2.53	0.90	0.94	1.01	1.55	0.85	0.80	0.82
8	71447	2.29	1.47	1.23	1.11	2.63	1.82	1.57	1.32	2.46	1.21	1.21	1.31
9	98855	6.44	4.34	5.58	6.38	6.51	4.38	5.62	6.41	1.05	0.58	0.72	0.66

Colorado

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	30136	0.82	2.34	4.09	2.88	1.02	2.68	4.22	2.92	1.00	1.28	1.00	0.46
2	2446	8.73	8.07	6.17	5.34	11.13	10.38	7.36	6.45	11.25	9.30	7.41	6.47
3	18495	1.25	1.46	3.25	2.71	1.76	1.74	3.38	2.81	1.63	1.74	0.96	0.78
4	1664	7.18	5.77	6.78	5.92	9.54	7.14	7.79	6.71	8.97	7.17	5.76	5.71
5	23631	25.85	7.93	16.77	22.13	25.88	7.97	16.79	22.14	1.57	0.88	1.17	0.79
6	8512	1.65	11.42	2.12	3.62	1.99	11.72	2.56	3.89	1.98	2.36	1.55	1.37
7	4117	7.17	3.77	3.23	5.23	9.05	4.72	4.09	6.26	6.95	3.99	3.94	3.99
8	4173	6.31	5.12	3.92	3.86	8.60	6.28	5.11	4.93	8.41	4.94	4.52	4.69
9	9781	4.21	2.17	2.83	2.54	4.74	2.64	3.61	3.09	4.62	2.43	3.01	2.74

Florida

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	139148	0.23	2.17	5.19	2.97	0.27	2.23	5.20	2.98	0.23	0.52	0.35	0.14
2	7330	8.26	5.03	8.07	9.53	9.11	5.78	8.46	9.79	4.20	3.43	2.77	2.50
3	88828	1.25	1.44	0.43	0.40	1.45	1.58	0.52	0.50	0.76	0.63	0.49	0.44
4	13044	1.57	1.29	1.37	0.89	1.92	1.50	1.78	1.12	1.89	1.07	1.29	1.13
5	54085	25.16	10.30	20.66	21.60	25.16	10.34	20.66	21.61	0.72	0.98	0.49	0.40
6	13457	1.58	11.01	5.78	3.97	2.06	11.09	5.96	4.15	2.00	1.23	1.37	1.18
7	13401	3.09	1.65	1.07	2.14	3.63	2.03	1.38	2.37	1.97	1.53	1.27	1.04
8	19093	2.69	3.95	3.13	2.46	3.57	4.22	3.45	2.81	3.01	1.53	1.52	1.49
9	40559	2.62	1.47	1.23	2.41	3.17	1.81	1.61	2.71	2.13	1.20	1.42	1.30

Hawaii

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	3233	5.84	3.33	7.24	6.26	7.77	4.14	8.09	7.23	7.71	3.79	4.00	4.11
2	216	96.07	59.34	64.73	64.82	96.29	71.01	73.00	73.02	167.27	101.38	107.22	107.32
3	2949	7.40	5.84	5.19	5.16	8.86	7.21	6.36	6.35	8.93	7.23	6.18	6.08
4	1292	22.69	21.22	23.10	22.40	30.21	23.72	25.20	24.72	16.66	8.79	8.22	8.58
5	4716	23.05	13.45	16.40	17.25	23.37	13.91	16.66	17.49	5.04	4.11	3.53	3.53
6	13992	2.18	3.06	7.78	7.79	2.57	3.39	7.96	7.96	2.57	1.42	1.56	1.52
7	1684	10.27	7.41	8.99	7.41	14.25	10.13	11.67	9.49	14.30	9.09	9.70	8.78
8	4305	10.90	4.05	6.22	6.19	12.76	4.74	7.36	7.42	11.77	3.57	5.71	5.87
9	3395	7.33	5.16	4.69	5.46	8.88	5.94	5.72	6.40	6.19	3.47	4.03	4.13

Louisiana

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	49854	0.75	2.88	5.44	3.78	1.01	3.08	5.53	3.81	0.98	1.05	0.96	0.48
2	2781	8.59	8.02	7.69	4.84	9.87	9.62	9.17	6.21	9.97	9.71	7.47	6.25
3	31521	1.23	1.70	1.39	1.83	1.39	2.27	1.81	1.95	0.84	2.13	1.25	0.67
4	5846	4.73	2.39	3.46	3.31	5.71	3.12	4.16	3.95	5.47	3.13	3.63	3.02
5	26959	23.33	7.38	15.65	19.98	23.34	7.51	15.67	19.99	1.03	1.55	0.80	0.67
6	3877	3.87	9.42	6.86	3.65	4.12	10.05	7.15	4.35	4.09	3.21	1.92	2.62
7	3059	9.28	5.32	5.90	6.48	12.01	6.99	7.42	7.99	10.68	6.44	6.27	6.09
8	6382	4.55	3.27	2.83	2.62	5.53	4.00	3.35	3.19	5.55	3.54	3.19	3.03
9	5686	7.01	3.14	4.46	4.19	8.23	3.81	5.37	5.00	7.84	3.74	4.71	3.56

Mississippi

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	25778	1.04	4.68	8.26	4.44	1.46	5.05	8.32	4.50	1.40	1.82	0.93	0.70
2	1530	21.33	16.60	20.05	20.16	26.75	19.50	22.19	22.26	22.63	13.21	11.95	12.02
3	18382	1.40	1.44	2.57	0.70	1.62	1.75	2.81	0.84	1.43	1.72	1.45	0.56
4	5136	6.81	6.48	6.06	4.72	8.21	7.82	7.13	5.66	7.60	4.57	5.01	4.29
5	29238	25.25	8.88	15.03	20.22	25.26	8.94	15.08	20.23	1.14	1.12	1.35	0.72
6	5722	1.88	17.62	7.26	8.10	2.53	17.77	7.48	8.28	2.35	2.00	1.69	1.61
7	1084	20.71	13.44	15.46	16.21	25.19	15.93	17.70	18.29	22.87	12.01	13.36	11.75
8	4180	8.86	7.41	8.68	5.57	10.27	9.07	10.24	7.19	9.71	6.05	5.38	5.48
9	4364	5.62	4.36	4.54	5.15	8.39	5.27	5.46	6.07	8.45	4.50	4.25	4.81

Nevada

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	15940	1.68	5.22	3.56	0.87	1.85	5.39	3.73	1.04	1.12	1.26	1.08	0.58
2	949	19.14	12.54	15.16	19.17	22.35	16.18	16.56	20.13	14.35	11.45	7.90	7.62
3	4895	4.53	16.34	8.32	8.37	5.91	16.80	8.57	8.62	4.00	3.36	2.24	2.28
4	389	48.44	42.92	45.70	45.85	68.54	49.85	53.39	53.57	94.54	53.25	53.13	52.93
5	2498	21.73	3.56	21.01	19.93	24.44	4.49	21.76	20.75	14.36	4.52	7.20	7.26
6	1312	12.37	15.50	10.27	7.21	13.77	17.46	12.81	8.52	13.82	6.99	7.69	7.27
7	3273	9.09	4.44	7.72	8.17	10.93	5.83	8.52	8.86	6.71	5.34	3.96	3.77
8	1436	56.80	50.48	56.81	56.79	58.46	51.37	57.29	57.30	32.23	19.38	17.21	17.72
9	2983	47.18	37.98	48.13	47.51	47.29	38.13	48.17	47.54	6.12	5.61	4.03	3.31

New Jersey

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	47941	0.55	2.89	6.35	4.44	0.67	3.04	6.36	4.46	0.67	0.90	0.43	0.37
2	2610	13.02	7.50	12.41	14.58	15.54	8.91	13.57	15.53	9.88	6.65	6.29	6.30
3	51493	1.82	2.10	2.19	1.58	1.92	2.36	2.22	1.62	0.62	1.10	0.40	0.34
4	8125	1.63	2.74	3.55	1.54	2.00	3.17	3.77	1.85	1.88	1.70	1.23	1.11
5	45222	24.68	6.60	16.12	20.96	24.69	6.65	16.13	20.96	0.95	0.88	0.72	0.55
6	3291	6.28	13.01	5.57	4.10	7.91	14.04	6.60	4.93	7.86	4.71	4.99	4.42
7	8707	4.65	2.92	2.97	2.61	5.62	3.55	3.68	3.30	5.41	3.33	3.56	3.31
8	12252	4.97	5.91	4.09	3.89	6.15	6.96	5.01	4.85	5.55	3.64	3.45	3.46
9	15180	7.12	5.05	5.83	6.38	7.98	5.47	6.29	6.79	4.56	2.22	2.52	2.48

New York

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	108088	0.25	2.62	5.25	4.02	0.28	2.71	5.27	4.02	0.26	0.65	0.47	0.15
2	8126	6.71	9.02	12.37	6.65	8.45	10.10	13.13	7.52	5.75	4.23	3.98	3.61
3	123852	0.42	0.54	1.18	1.46	0.45	0.69	1.22	1.48	0.43	0.53	0.34	0.26
4	22196	2.90	4.72	4.08	2.94	3.25	4.91	4.27	3.16	2.22	1.29	1.22	1.17
5	174111	24.59	4.89	15.98	20.30	24.59	4.90	15.98	20.30	0.33	0.41	0.28	0.17
6	8598	2.60	19.79	8.72	6.07	2.92	19.90	8.81	6.25	2.82	1.79	1.17	1.41
7	41450	1.14	3.21	1.29	0.72	1.35	3.34	1.43	0.84	1.24	0.90	0.60	0.63
8	50909	1.26	3.13	1.68	1.15	1.63	3.28	2.03	1.47	1.63	0.96	1.17	1.03
9	43131	5.89	2.95	4.56	5.80	6.14	3.20	4.71	5.88	1.87	1.30	1.22	1.05

Pennsylvania

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	76553	0.64	3.99	5.85	4.04	0.71	4.05	5.86	4.06	0.71	0.67	0.38	0.37
2	6987	5.99	4.23	2.57	3.28	6.69	5.17	3.15	4.10	5.35	3.59	3.17	2.97
3	114113	0.35	0.50	0.24	0.27	0.47	0.64	0.30	0.30	0.37	0.62	0.29	0.27
4	16137	3.22	3.88	4.09	2.57	4.01	4.37	4.49	3.05	3.72	2.00	1.80	2.19
5	147542	25.13	3.36	17.32	19.36	25.13	3.39	17.32	19.36	0.43	0.44	0.29	0.27
6	758	15.38	13.22	9.67	9.69	21.47	15.03	11.14	11.16	21.99	10.39	10.98	10.86
7	8664	3.99	3.43	2.46	2.24	4.55	4.14	2.93	2.65	4.41	3.83	2.90	2.62
8	27446	2.63	3.17	2.28	1.76	3.36	3.52	2.64	2.11	3.37	1.64	1.73	1.73
9	35101	3.37	1.26	1.97	2.16	3.81	1.53	2.41	2.55	3.05	1.45	1.88	1.71

Rhode Island

Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	3576	0.23	6.61	5.44	4.32	4.06	7.86	5.82	4.73	4.07	4.46	2.51	2.40
2	429	39.19	25.99	23.45	22.54	49.56	31.07	28.97	28.19	48.20	26.68	28.53	27.46
3	9222	1.07	1.05	1.00	0.94	2.06	1.29	1.19	1.11	1.98	1.26	1.08	0.95
4	574	33.33	13.69	14.63	14.97	33.72	18.24	19.15	19.00	34.75	18.19	19.32	19.31
5	20551	24.97	2.38	16.26	19.21	24.99	2.48	16.29	19.23	1.47	0.71	1.18	1.03
6	870	25.05	16.24	15.42	13.52	31.82	20.23	19.41	17.31	33.52	17.87	17.91	17.57
7	1074	24.87	13.84	12.40	12.82	26.39	17.59	15.74	15.89	27.23	17.14	15.90	16.18
8	1626	18.30	10.21	10.33	9.89	22.83	13.08	12.57	12.00	22.54	11.92	12.05	11.68
9	894	20.58	11.89	11.99	12.45	24.87	14.89	14.97	15.81	23.54	13.88	13.81	13.98

Texas

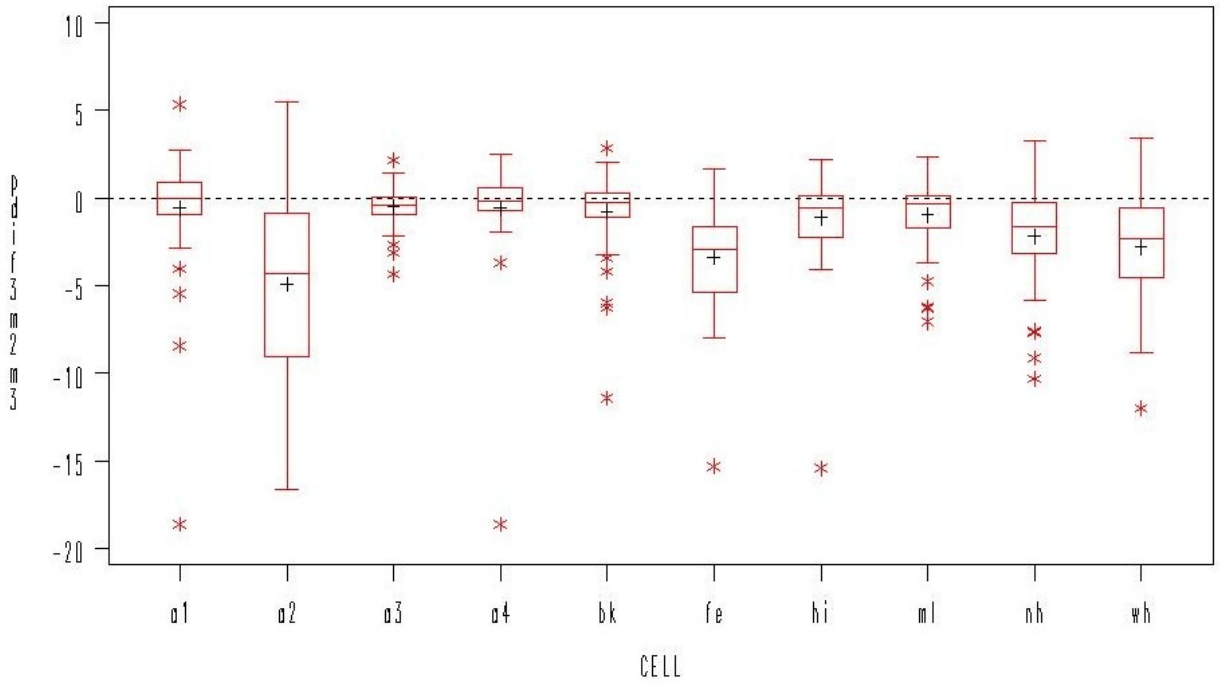
Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	244363	0.23	0.61	4.62	2.93	0.29	0.70	4.63	2.93	0.22	0.33	0.33	0.10
2	8909	6.77	8.87	10.08	6.89	7.47	9.84	10.57	7.13	3.11	3.94	2.91	1.70
3	105052	0.66	0.77	0.77	0.85	0.76	0.95	0.97	0.88	0.47	0.71	0.68	0.25
4	16380	2.55	2.03	3.35	1.46	2.96	2.37	3.70	1.76	2.88	1.81	1.79	1.60
5	92246	25.24	13.60	17.34	21.92	25.24	13.62	17.34	21.92	0.56	0.84	0.58	0.33
6	34056	23.86	32.17	16.94	29.54	23.89	32.19	16.97	29.55	0.94	0.74	0.89	0.53
7	13014	9.76	8.39	7.93	8.84	10.44	8.96	8.24	9.10	4.12	3.47	2.47	2.39
8	24163	3.61	3.39	3.91	2.93	4.47	3.88	4.52	3.53	4.02	2.40	3.07	2.58
9	22926	7.71	5.45	5.64	7.41	8.55	5.76	5.97	7.68	4.04	2.00	2.08	2.21

West Virginia

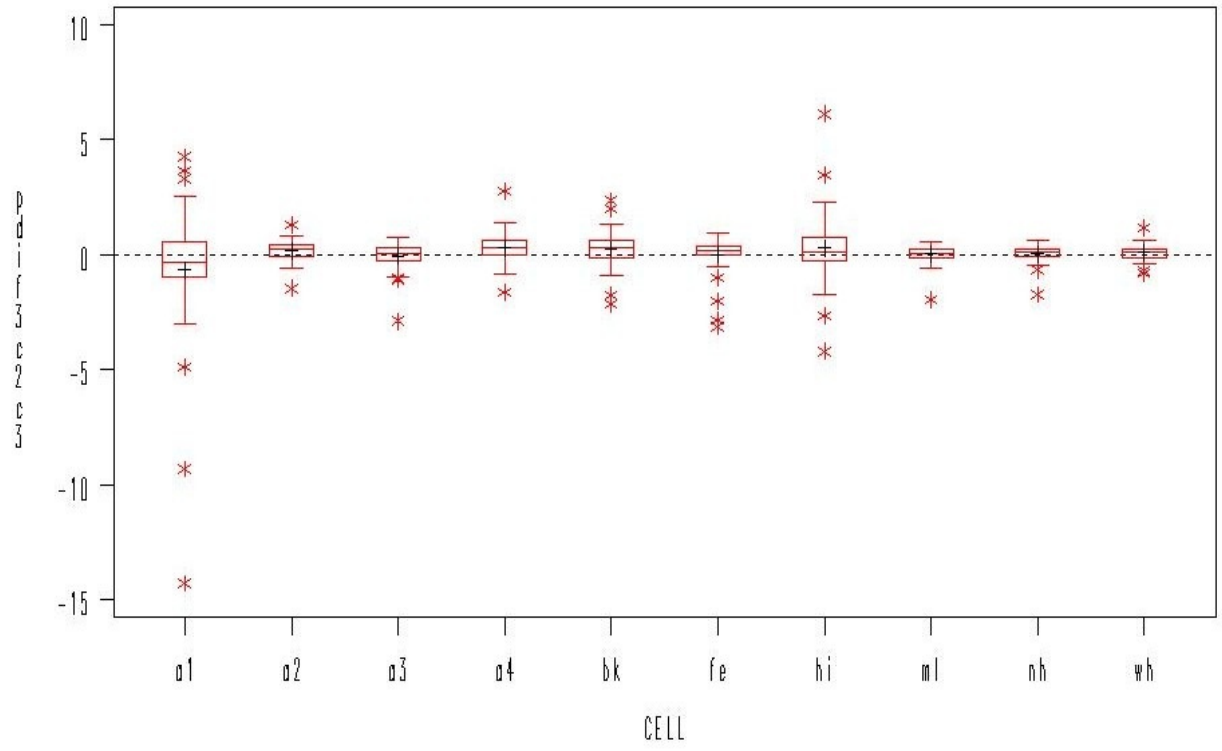
Major Type	Census 2000	3-year estimate PMADs				3-year estimate PRMSEs				3-year estimate CVs			
		C1	C2	C3	C4	C1	C2	C3	C4	C1	C2	C3	C4
1	10505	1.68	5.26	3.24	1.71	2.28	5.93	3.56	2.05	2.29	2.62	1.64	1.37
2	558	45.07	17.95	26.35	26.43	53.65	23.25	31.05	31.01	50.52	20.91	28.08	26.88
3	11601	2.68	1.93	3.42	2.23	3.22	2.53	4.01	2.54	2.94	2.37	2.31	1.48
4	1345	16.62	12.73	17.91	12.75	20.75	15.44	19.93	15.47	16.16	10.78	7.74	8.66
5	14300	26.77	4.20	22.65	23.01	26.81	4.42	22.71	23.01	1.95	1.42	2.11	0.81
6	59	114.56	75.76	81.95	68.26	133.39	86.55	88.31	79.31	221.28	116.26	118.21	115.89
7	975	27.86	16.02	17.53	16.37	32.70	19.41	21.37	20.07	32.36	18.34	21.00	19.70
8	1969	14.13	6.92	8.84	6.97	16.82	8.41	10.87	8.51	16.48	8.44	8.19	7.97
9	1835	12.91	8.01	8.92	8.92	16.14	9.58	11.06	10.51	16.43	9.63	11.08	10.57

Evaluation Measures for Large (GQ≥18,000) Counties--3-Year Estimates

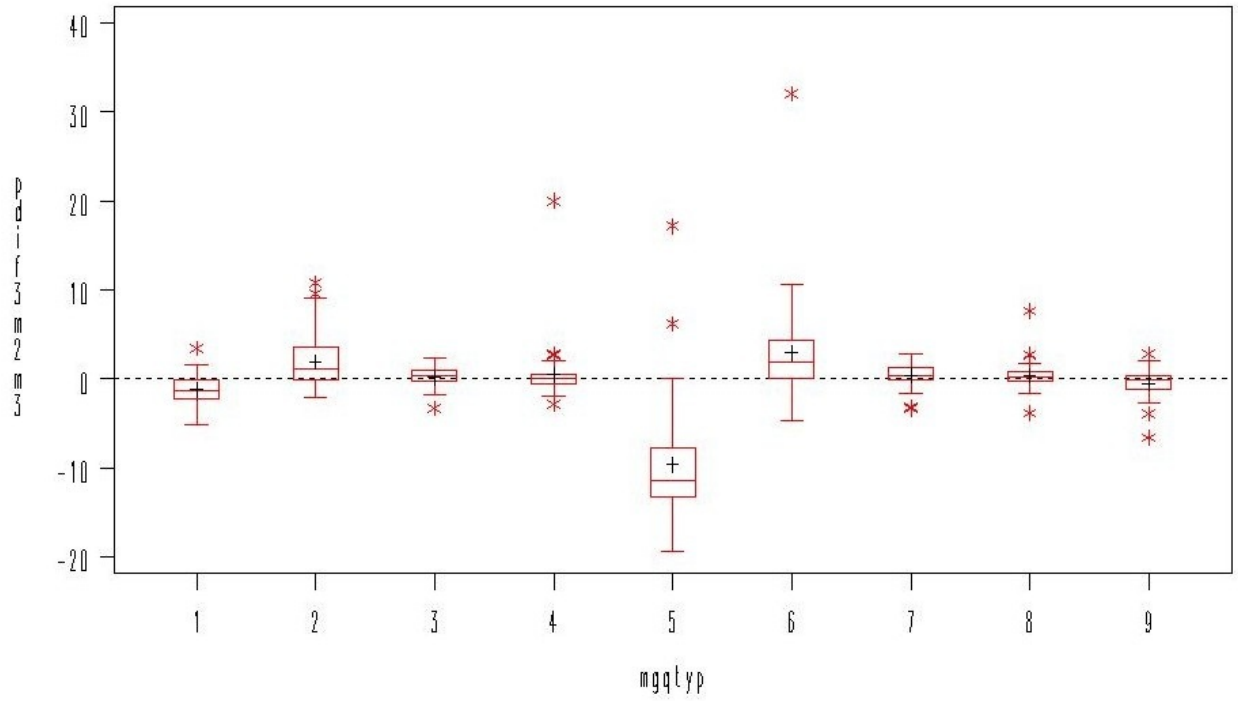
Plot 1: C2 - C3 PMAD for Demographic Characteristics



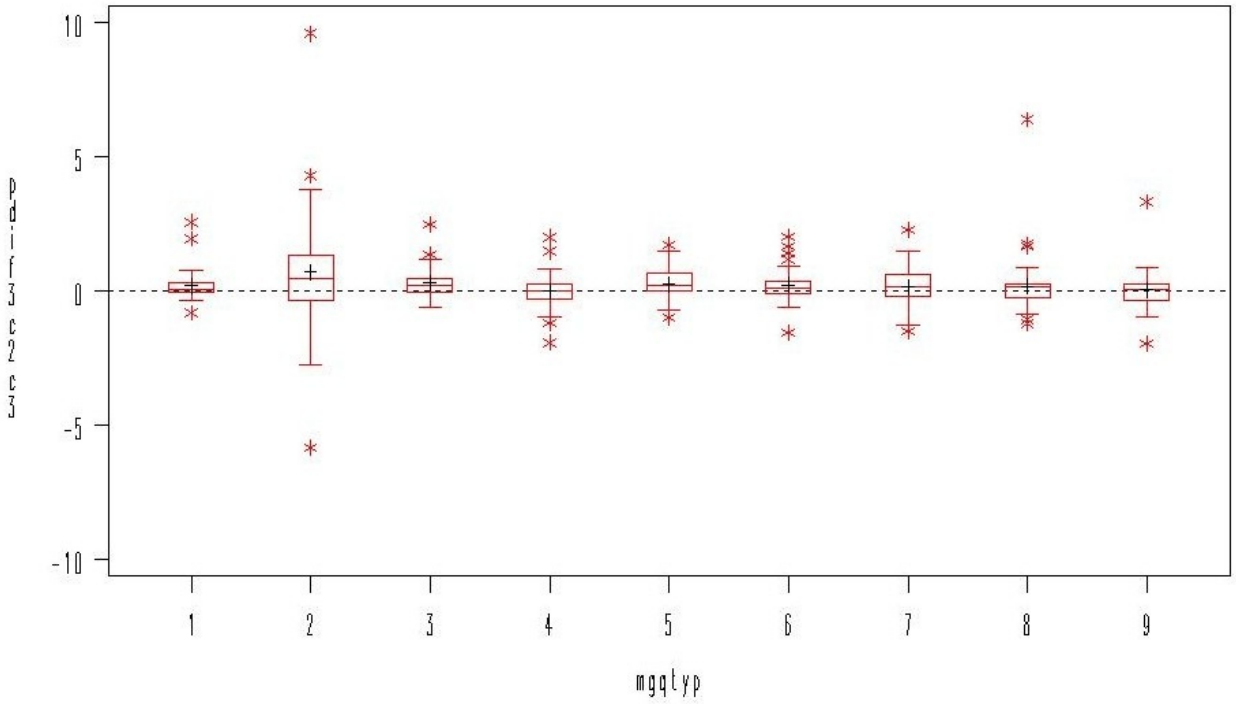
Plot 2: C2 - C3 CV for Demographic Characteristics



Plot 3: C2 - C3 PMAD for Major GQ Types

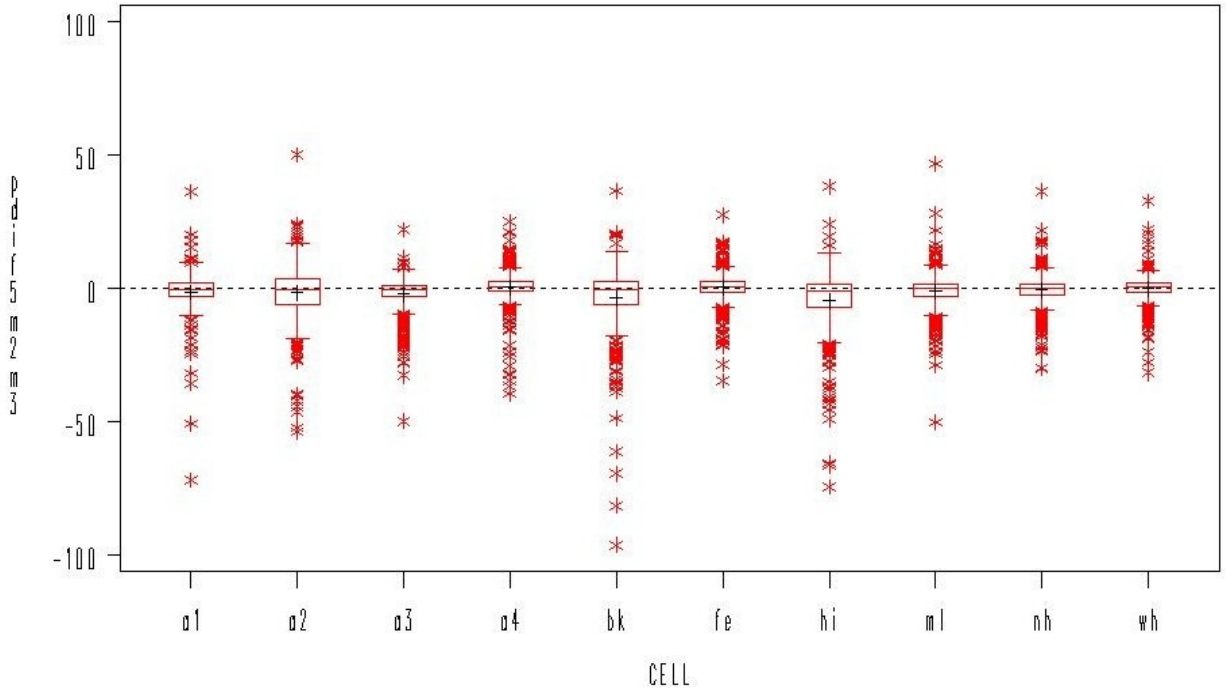


Plot 4: C2 - C3 CV for Major GQ Types

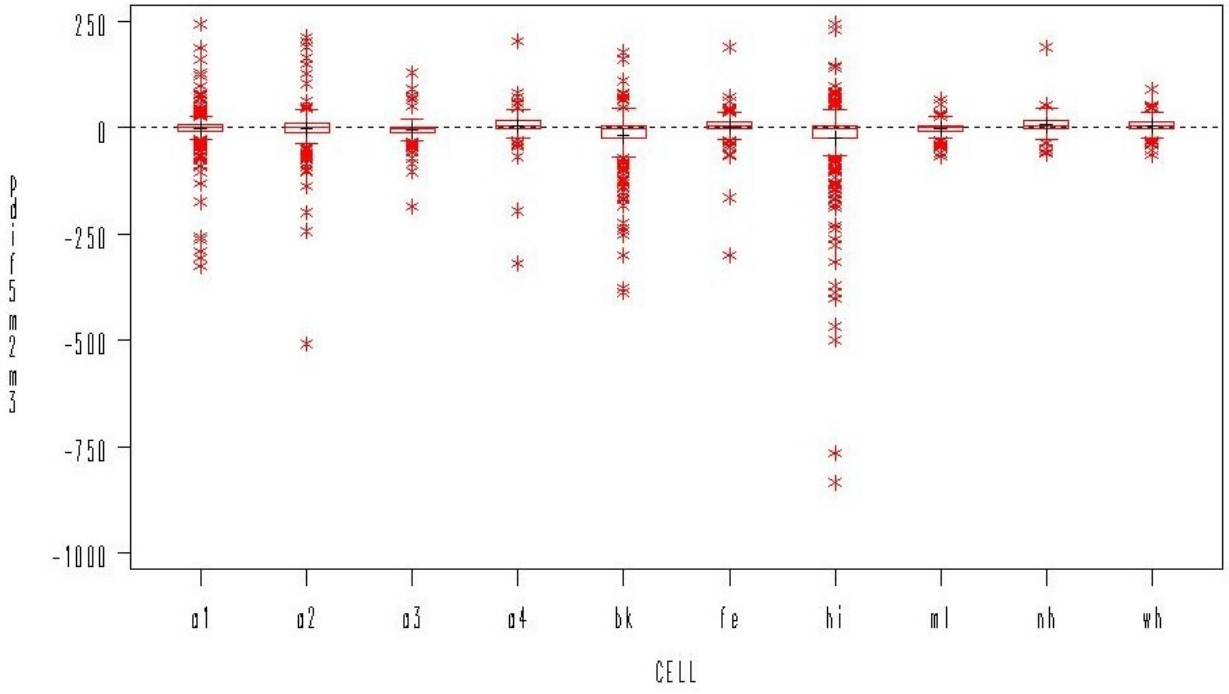


Evaluation Measures for Small (GQ<18000) Counties--5-Year Estimates

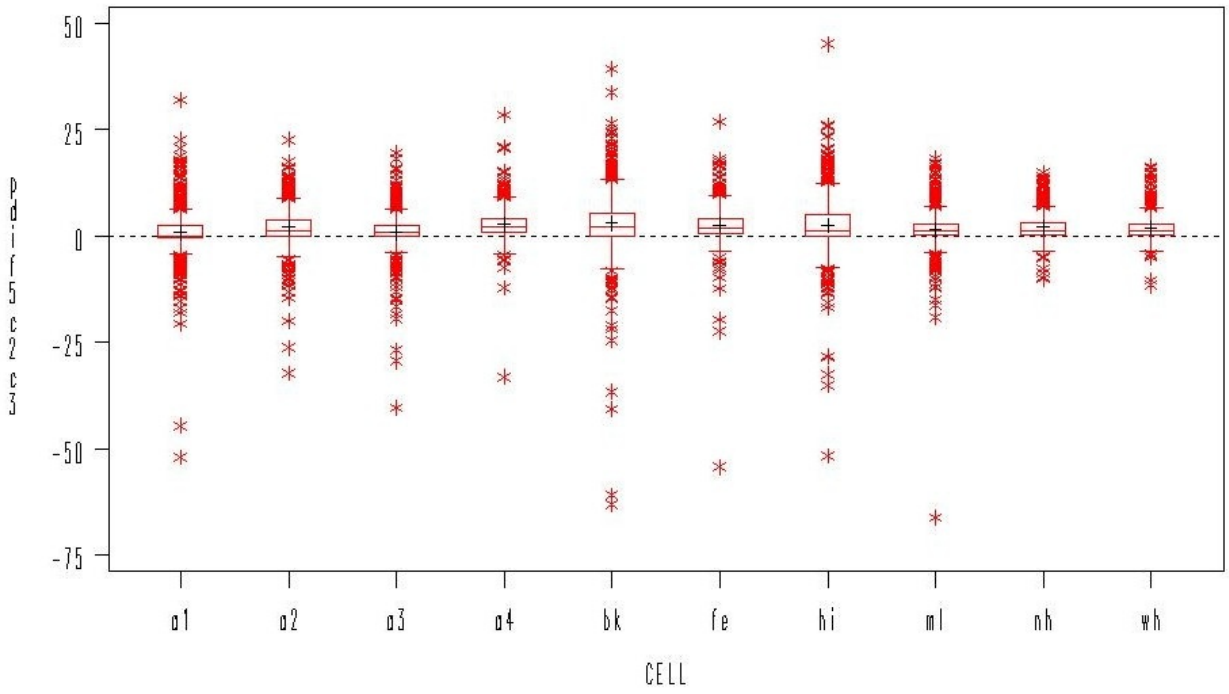
Plot 1: C2 - C3 PMAD for Demographic Characteristics (Census>100)



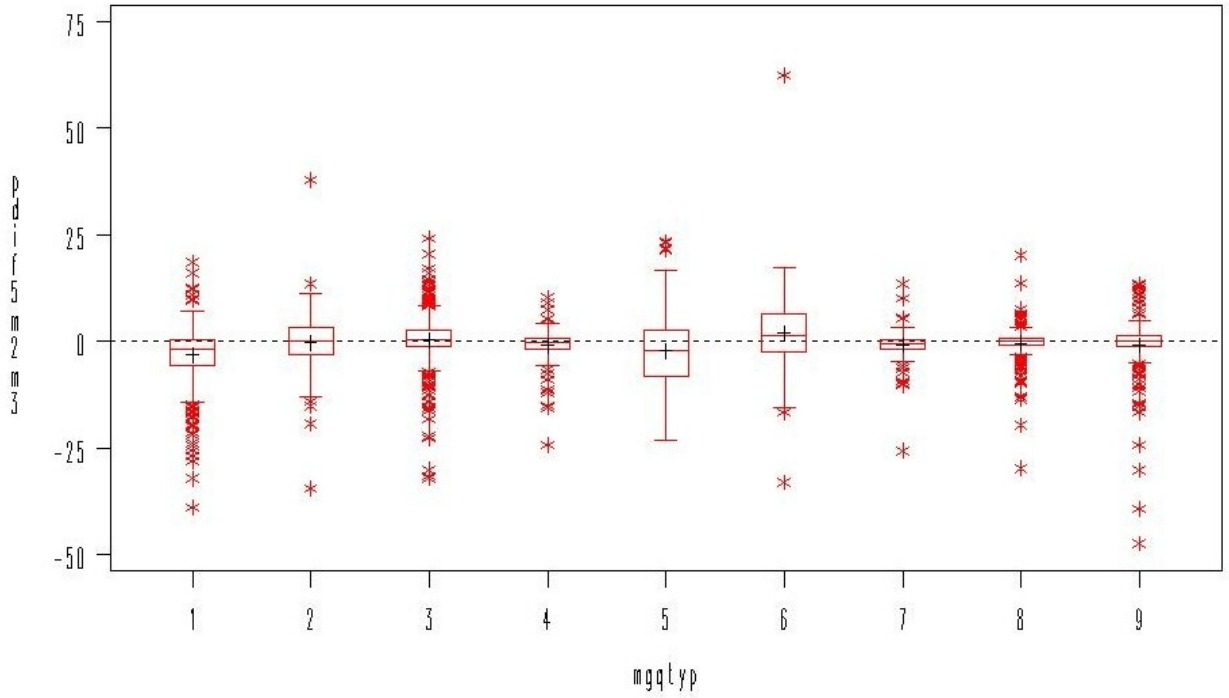
Plot 2: C2 - C3 PMAD for Demographic Characteristics (Census≤100)



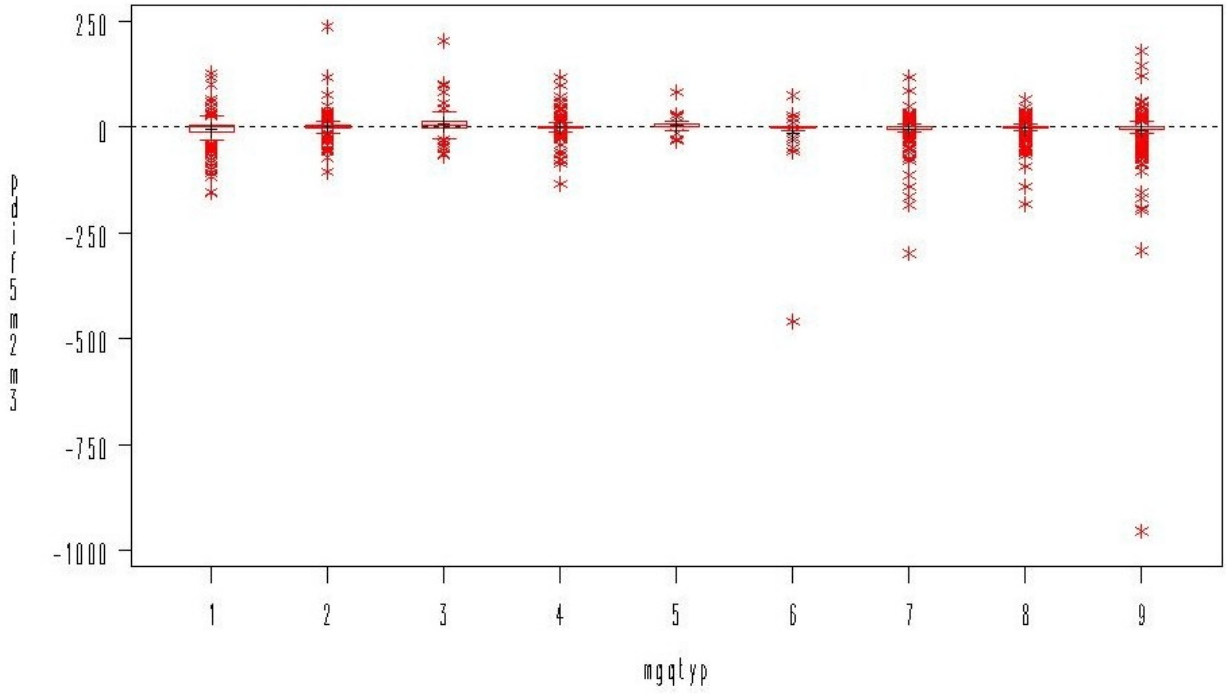
Plot 3: C2 -C3 CV for Demographic Characteristics



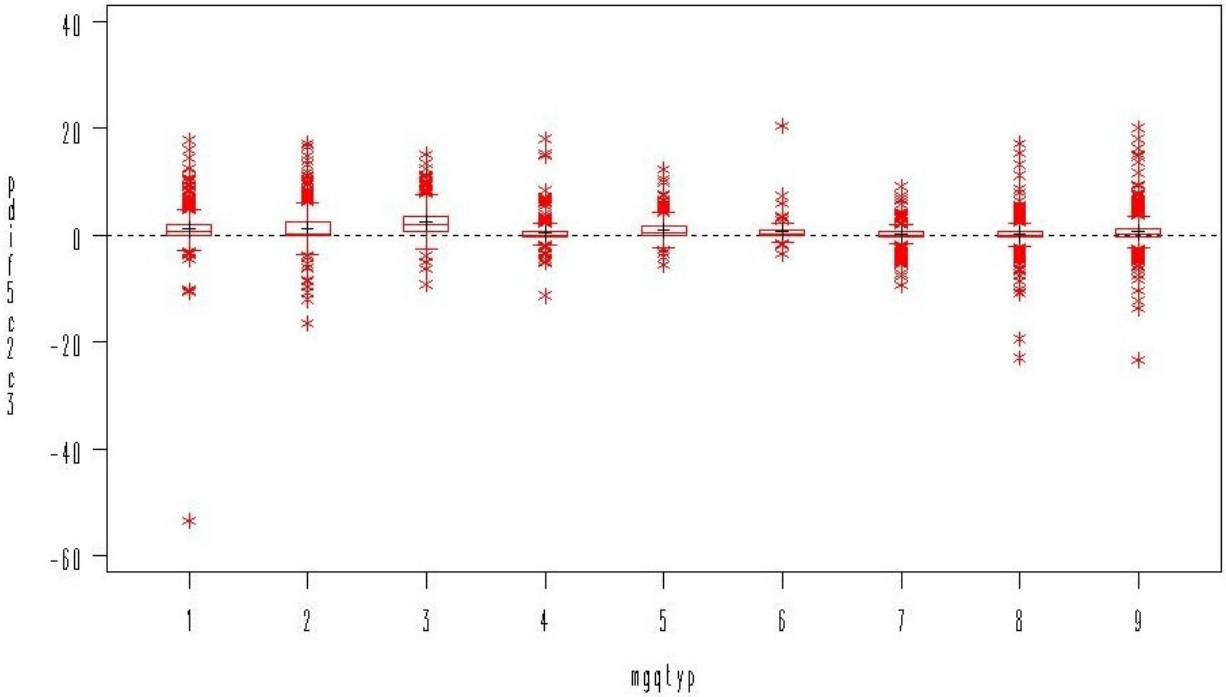
Plot 4: C2 - C3 PMAD for Major GQ Types (Census>100)



Plot 5: C2 - C3 PMAD for Major GQ Types (Census ≤ 100)



Plot 6: C2 - C3 CV for Major GQ Types



Appendix 4

C2 and C5: Evaluation Measures for States -- 3-year Estimates

Arizona

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	72720	0.24	1.08	0.30	1.31	0.22	1.32
Female	37130	0.46	2.12	0.59	2.57	0.43	2.58
Hispanic	24550	0.00	2.09	0.00	2.50	0.00	1.94
Non-Hispanic	85300	0.00	0.60	0.00	0.72	0.00	0.55
White	75805	0.27	0.81	0.32	1.00	0.32	0.87
Black	10224	0.70	2.48	0.84	3.12	0.82	2.54
age 0-17	6020	0.53	5.45	0.66	6.94	0.64	6.98
age 18-29	41593	0.13	1.02	0.18	1.35	0.18	1.32
age 30-54	36350	0.11	1.87	0.13	2.30	0.13	1.95
age 55+	25887	0.11	2.81	0.16	3.32	0.13	2.07

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	45783	3.33	0.00	3.52	0.00	1.10	0.00
2	1955	6.43	0.00	8.36	0.00	7.49	0.00
3	13607	1.74	0.00	2.09	0.00	2.08	0.00
4	2423	6.37	0.00	7.80	0.00	7.68	0.00
5	17340	9.26	0.00	9.55	0.00	2.58	0.00
6	5256	13.19	0.00	13.45	0.00	2.33	0.00
7	5526	4.87	0.00	5.33	0.00	2.34	0.00

California

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	528567	0.01	0.35	0.01	0.41	0.01	0.33
Female	291187	0.02	0.63	0.02	0.74	0.02	0.60
Hispanic	192560	0.00	0.70	0.00	0.94	0.00	0.84
Non-Hispanic	627194	0.00	0.22	0.00	0.29	0.00	0.26
White	495036	0.18	0.34	0.23	0.44	0.23	0.40
Black	133748	0.16	0.63	0.21	0.80	0.19	0.79
age 0-17	46188	0.00	3.03	0.00	3.66	0.00	2.92
age 18-29	307768	0.00	0.40	0.01	0.49	0.01	0.45
age 30-54	265090	0.00	1.15	0.01	1.30	0.01	0.68
age 55+	200708	0.00	1.25	0.00	1.41	0.00	0.72

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	248516	1.60	0.00	1.68	0.00	0.50	0.00
2	17900	7.48	0.00	7.93	0.00	2.46	0.00
3	120724	4.10	0.00	4.17	0.00	0.72	0.00
4	26516	2.17	0.00	2.29	0.00	0.70	0.00
5	126715	10.23	0.00	10.24	0.00	0.56	0.00
6	58810	9.05	0.00	9.09	0.00	0.76	0.00
7	220573	2.07	0.00	2.13	0.00	0.54	0.00

Colorado

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	65453	0.13	0.66	0.17	0.84	0.15	0.82
Female	37502	0.23	1.15	0.29	1.46	0.26	1.43
Hispanic	16451	0.00	1.96	0.00	2.31	0.00	2.32
Non-Hispanic	86504	0.00	0.37	0.00	0.44	0.00	0.44
White	82461	0.28	0.62	0.34	0.73	0.34	0.71
Black	11194	0.69	2.72	0.84	3.22	0.84	3.11
age 0-17	4709	0.53	8.11	0.66	9.78	0.66	9.20
age 18-29	46440	0.11	0.83	0.16	1.02	0.15	0.91
age 30-54	26748	0.20	2.03	0.25	2.52	0.21	2.21
age 55+	25058	0.23	1.57	0.28	1.92	0.18	1.93

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	30136	2.34	0.00	2.68	0.00	1.28	0.00
2	2446	8.07	0.00	10.38	0.00	9.30	0.00
3	18495	1.46	0.00	1.74	0.00	1.74	0.00
4	1664	5.77	0.00	7.14	0.00	7.17	0.00
5	23631	7.93	0.00	7.97	0.00	0.88	0.00
6	8512	11.42	0.00	11.72	0.00	2.36	0.00
7	4117	2.23	0.00	2.79	0.00	2.47	0.00

Florida

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	241149	0.02	0.42	0.03	0.52	0.02	0.51
Female	147796	0.03	0.69	0.04	0.85	0.04	0.84
Hispanic	49771	0.00	1.38	0.00	1.76	0.00	1.75
Non-Hispanic	339174	0.00	0.20	0.00	0.26	0.00	0.26
White	260296	0.14	0.38	0.17	0.44	0.14	0.44
Black	110192	0.15	0.95	0.18	1.16	0.18	1.09
age 0-17	16959	0.20	3.96	0.26	4.92	0.26	3.59
age 18-29	129782	0.04	0.44	0.05	0.54	0.05	0.55
age 30-54	116156	0.04	0.65	0.05	0.82	0.05	0.74
age 55+	126048	0.03	0.82	0.03	1.00	0.03	0.70

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	139148	2.17	0.00	2.23	0.00	0.52	0.00
2	7330	5.03	0.00	5.78	0.00	3.43	0.00
3	88828	1.44	0.00	1.58	0.00	0.63	0.00
4	13044	1.29	0.00	1.50	0.00	1.07	0.00
5	54085	10.30	0.00	10.34	0.00	0.98	0.00
6	13457	11.01	0.00	11.09	0.00	1.23	0.00
7	13401	0.95	0.00	1.22	0.00	1.20	0.00

Hawaii

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	24401	0.39	1.63	0.47	2.10	0.43	1.97
Female	11381	0.84	3.89	1.01	4.98	0.93	4.50
Hispanic	3079	0.00	5.48	0.00	6.82	0.00	6.55
Non-Hispanic	32703	0.00	0.52	0.00	0.65	0.00	0.65
White	16380	0.61	1.89	0.74	2.30	0.72	2.30
Black	3088	2.60	6.97	3.09	8.06	2.75	6.42
age 0-17	1339	2.72	14.15	4.71	17.91	4.23	18.01
age 18-29	19006	0.26	1.08	0.35	1.38	0.35	1.28
age 30-54	8389	0.49	3.30	0.61	4.16	0.52	3.70
age 55+	7048	0.37	3.80	0.44	4.66	0.44	4.63

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	3233	3.33	0.00	4.14	0.00	3.79	0.00
2	216	59.34	45.92	71.01	67.76	101.38	92.62
3	2949	5.84	0.00	7.21	0.00	7.23	0.00
4	1292	21.22	0.00	23.72	0.00	8.79	0.00
5	4716	13.45	0.00	13.91	0.00	4.11	0.00
6	13992	3.06	0.00	3.39	0.00	1.42	0.00
7	1684	3.27	0.00	4.17	0.00	3.86	0.00

Louisiana

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	84940	0.13	1.04	0.21	1.32	0.19	1.22
Female	51025	0.21	1.73	0.34	2.20	0.32	2.06
Hispanic	3774	0.00	6.13	0.00	7.56	0.00	6.31
Non-Hispanic	132191	0.00	0.18	0.00	0.22	0.00	0.17
White	65657	0.18	0.93	0.22	1.17	0.22	0.99
Black	67323	0.14	0.93	0.18	1.15	0.17	1.01
age 0-17	5595	0.63	8.10	0.80	10.15	0.79	9.77
age 18-29	53614	0.14	0.98	0.18	1.24	0.17	1.10
age 30-54	39424	0.15	1.22	0.19	1.52	0.18	1.47
age 55+	37332	0.10	1.82	0.12	2.27	0.12	2.28

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	49854	2.88	0.00	3.08	0.00	1.05	0.00
2	2781	8.02	0.00	9.62	0.00	9.71	0.00
3	31521	1.70	0.00	2.27	0.00	2.13	0.00
4	5846	2.39	0.00	3.12	0.00	3.13	0.00
5	26959	7.38	0.00	7.51	0.00	1.55	0.00
6	3877	9.42	0.00	10.05	0.00	3.21	0.00
7	3059	1.94	0.00	2.32	0.00	1.77	0.00

Mississippi

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	55610	0.17	1.53	0.22	1.91	0.16	1.89
Female	39804	0.24	2.14	0.31	2.67	0.23	2.62
Hispanic	2533	0.00	6.35	0.00	7.57	0.00	7.44
Non-Hispanic	92881	0.00	0.17	0.00	0.21	0.00	0.20
White	49401	0.22	1.21	0.28	1.47	0.22	1.07
Black	43700	0.17	1.43	0.20	1.75	0.20	1.49
age 0-17	3834	1.48	7.05	1.92	9.76	1.34	9.20
age 18-29	47688	0.16	0.66	0.20	0.79	0.20	0.79
age 30-54	19671	0.32	2.32	0.43	2.81	0.36	2.83
age 55+	24221	0.13	1.41	0.20	1.73	0.20	1.69

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	25778	4.68	0.00	5.05	0.00	1.82	0.00
2	1530	16.60	0.00	19.50	0.00	13.21	0.00
3	18382	1.44	0.00	1.75	0.00	1.72	0.00
4	5136	6.48	0.00	7.82	0.00	4.57	0.00
5	29238	8.88	0.00	8.94	0.00	1.12	0.00
6	5722	17.62	0.00	17.77	0.00	2.00	0.00
7	1084	4.19	0.00	4.90	0.00	3.19	0.00

Nevada

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	24014	0.70	1.78	0.91	2.19	0.64	1.69
Female	9661	1.74	4.31	2.26	5.33	1.62	4.00
Hispanic	4455	0.00	10.04	0.00	11.88	0.00	7.28
Non-Hispanic	29220	0.00	1.59	0.00	1.87	0.00	1.20
White	23978	0.72	1.92	0.85	2.21	0.50	1.19
Black	6453	0.77	4.11	0.99	5.35	0.89	3.84
age 0-17	1944	3.38	11.06	3.70	13.41	1.64	10.19
age 18-29	10391	1.94	2.51	2.07	2.97	0.70	1.99
age 30-54	13417	0.65	3.29	0.74	3.91	0.38	2.39
age 55+	7923	0.73	5.95	0.87	6.67	0.59	3.22

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	15940	5.22	0.00	5.39	0.00	1.26	0.00
2	949	12.54	0.00	16.18	0.00	11.45	0.00
3	4895	16.34	0.00	16.80	0.00	3.36	0.00
4	389	42.92	7.14	49.85	26.73	53.25	27.88
5	2498	3.56	0.00	4.49	0.00	4.52	0.00
6	1312	15.50	0.00	17.46	0.00	6.99	0.00
7	3273	32.55	0.00	32.56	0.00	1.42	0.00

New Jersey

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	110292	0.11	0.97	0.14	1.24	0.09	0.86
Female	84529	0.14	1.27	0.18	1.61	0.12	1.15
Hispanic	19815	0.00	2.58	0.00	3.17	0.00	3.06
Non-Hispanic	175006	0.00	0.29	0.00	0.36	0.00	0.35
White	122388	0.23	0.65	0.29	0.78	0.21	0.63
Black	56377	0.32	1.09	0.38	1.30	0.31	1.00
age 0-17	6187	0.66	6.98	0.83	8.49	0.63	7.77
age 18-29	71003	0.07	0.65	0.10	0.79	0.09	0.80
age 30-54	51576	0.07	1.85	0.09	2.23	0.09	1.88
age 55+	66055	0.03	1.43	0.04	1.83	0.03	1.36

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	47941	2.89	0.00	3.04	0.00	0.90	0.00
2	2610	7.50	0.00	8.91	0.00	6.65	0.00
3	51493	2.10	0.00	2.36	0.00	1.10	0.00
4	8125	2.74	0.00	3.17	0.00	1.70	0.00
5	45222	6.60	0.00	6.65	0.00	0.88	0.00
6	3291	13.01	0.00	14.04	0.00	4.71	0.00
7	8707	1.46	0.00	1.82	0.00	1.52	0.00

New York

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	323248	0.02	0.44	0.02	0.57	0.02	0.57
Female	257213	0.02	0.56	0.03	0.72	0.03	0.72
Hispanic	72341	0.00	1.00	0.00	1.26	0.00	1.21
Non-Hispanic	508120	0.00	0.14	0.00	0.18	0.00	0.17
White	367099	0.19	0.40	0.23	0.51	0.15	0.51
Black	148243	0.25	0.79	0.32	1.02	0.25	1.01
age 0-17	31133	0.06	2.33	0.08	3.05	0.08	3.02
age 18-29	241483	0.02	0.38	0.03	0.45	0.02	0.35
age 30-54	141374	0.03	0.93	0.04	1.16	0.03	1.09
age 55+	166471	0.02	0.52	0.02	0.62	0.02	0.62

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	108088	2.62	0.00	2.71	0.00	0.65	0.00
2	8126	9.02	0.00	10.10	0.00	4.23	0.00
3	123852	0.54	0.00	0.69	0.00	0.53	0.00
4	22196	4.72	0.00	4.91	0.00	1.29	0.00
5	174111	4.89	0.00	4.90	0.00	0.41	0.00
6	8598	19.79	0.00	19.90	0.00	1.79	0.00
7	41450	3.21	0.00	3.34	0.00	0.90	0.00
8	50909	3.13	0.00	3.28	0.00	0.96	0.00
9	43131	0.59	0.00	0.69	0.00	0.54	0.00

Pennsylvania

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	219229	0.03	0.56	0.03	0.72	0.03	0.73
Female	214072	0.03	0.58	0.03	0.74	0.03	0.74
Hispanic	18507	0.00	2.13	0.00	2.61	0.00	2.52
Non-Hispanic	414794	0.00	0.09	0.00	0.12	0.00	0.11
White	334531	0.12	0.36	0.15	0.45	0.15	0.45
Black	79043	0.26	1.11	0.35	1.38	0.27	1.34
age 0-17	16500	0.16	4.57	0.22	5.52	0.21	5.25
age 18-29	185833	0.03	0.31	0.04	0.38	0.04	0.38
age 30-54	79932	0.07	0.71	0.09	0.89	0.08	0.90
age 55+	151036	0.01	0.52	0.02	0.67	0.02	0.59

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	76553	3.99	0.00	4.05	0.00	0.67	0.00
2	6987	4.23	0.00	5.17	0.00	3.59	0.00
3	114113	0.50	0.00	0.64	0.00	0.62	0.00
4	16137	3.88	0.00	4.37	0.00	2.00	0.00
5	147542	3.36	0.00	3.39	0.00	0.44	0.00
6	758	13.22	0.00	15.03	0.00	10.39	0.00
7	8664	0.83	0.00	0.98	0.00	0.98	0.00

Rhode Island

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	18726	0.57	2.54	0.74	3.19	0.74	3.06
Female	20090	0.53	2.37	0.69	2.98	0.68	2.79
Hispanic	2396	0.00	5.37	0.00	6.69	0.00	6.72
Non-Hispanic	36420	0.00	0.35	0.00	0.44	0.00	0.44
White	32250	0.25	0.79	0.30	0.98	0.30	0.98
Black	3452	3.09	4.19	3.81	5.33	2.53	5.28
age 0-17	864	4.35	15.69	5.27	19.26	4.85	19.56
age 18-29	22801	0.18	0.71	0.23	0.92	0.21	0.83
age 30-54	4487	1.15	4.50	1.46	5.84	1.45	5.36
age 55+	10664	0.36	1.12	0.52	1.36	0.51	1.31

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	3576	6.61	0.00	7.86	0.00	4.46	0.00
2	429	25.99	0.00	31.07	0.00	26.68	0.00
3	9222	1.05	0.00	1.29	0.00	1.26	0.00
4	574	13.69	0.00	18.24	0.00	18.19	0.00
5	20551	2.38	0.00	2.48	0.00	0.71	0.00
6	870	16.24	0.00	20.23	0.00	17.87	0.00
7	1074	5.23	0.00	6.43	0.00	5.99	0.00

Texas

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	370702	0.02	0.49	0.02	0.59	0.02	0.59
Female	190407	0.03	0.95	0.04	1.15	0.04	1.14
Hispanic	122958	0.00	1.14	0.00	1.46	0.00	1.47
Non-Hispanic	438151	0.00	0.32	0.00	0.41	0.00	0.41
White	368493	0.16	0.36	0.20	0.44	0.18	0.42
Black	141330	0.12	0.95	0.15	1.14	0.12	1.10
age 0-17	22281	0.18	4.42	0.21	5.35	0.13	5.00
age 18-29	231508	0.03	0.41	0.03	0.49	0.02	0.44
age 30-54	173470	0.02	0.65	0.03	0.80	0.03	0.59
age 55+	133850	0.01	0.51	0.01	0.67	0.01	0.67

Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	244363	0.61	0.00	0.70	0.00	0.33	0.00
2	8909	8.87	0.00	9.84	0.00	3.94	0.00
3	105052	0.77	0.00	0.95	0.00	0.71	0.00
4	16380	2.03	0.00	2.37	0.00	1.81	0.00
5	92246	13.60	0.00	13.62	0.00	0.84	0.00
6	34056	32.17	0.00	32.19	0.00	0.74	0.00
7	13014	2.59	0.00	2.87	0.00	1.33	0.00

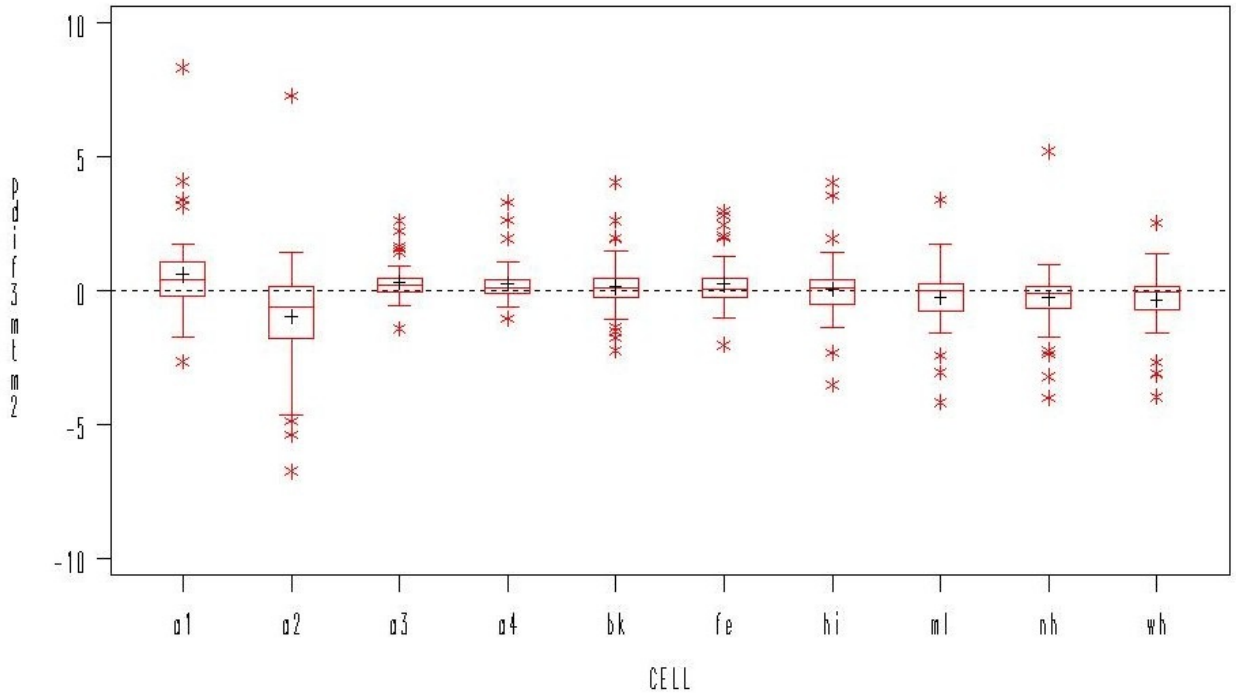
West Virginia

Characteristic	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
Male	23041	0.67	1.85	0.83	2.25	0.54	2.12
Female	20106	0.76	2.20	0.95	2.69	0.62	2.54
Hispanic	668	0.00	10.71	0.00	13.52	0.00	12.27
Non-Hispanic	42479	0.00	0.21	0.00	0.26	0.00	0.22
White	36090	0.14	0.81	0.18	0.99	0.17	0.78
Black	6252	0.51	3.47	0.63	4.35	0.62	4.10
age 0-17	1771	1.28	14.41	1.75	17.56	1.62	16.97
age 18-29	19057	0.39	1.23	0.46	1.55	0.27	1.33
age 30-54	8518	0.66	3.64	0.79	4.38	0.44	4.41
age 55+	13801	0.26	2.13	0.32	2.81	0.25	2.70

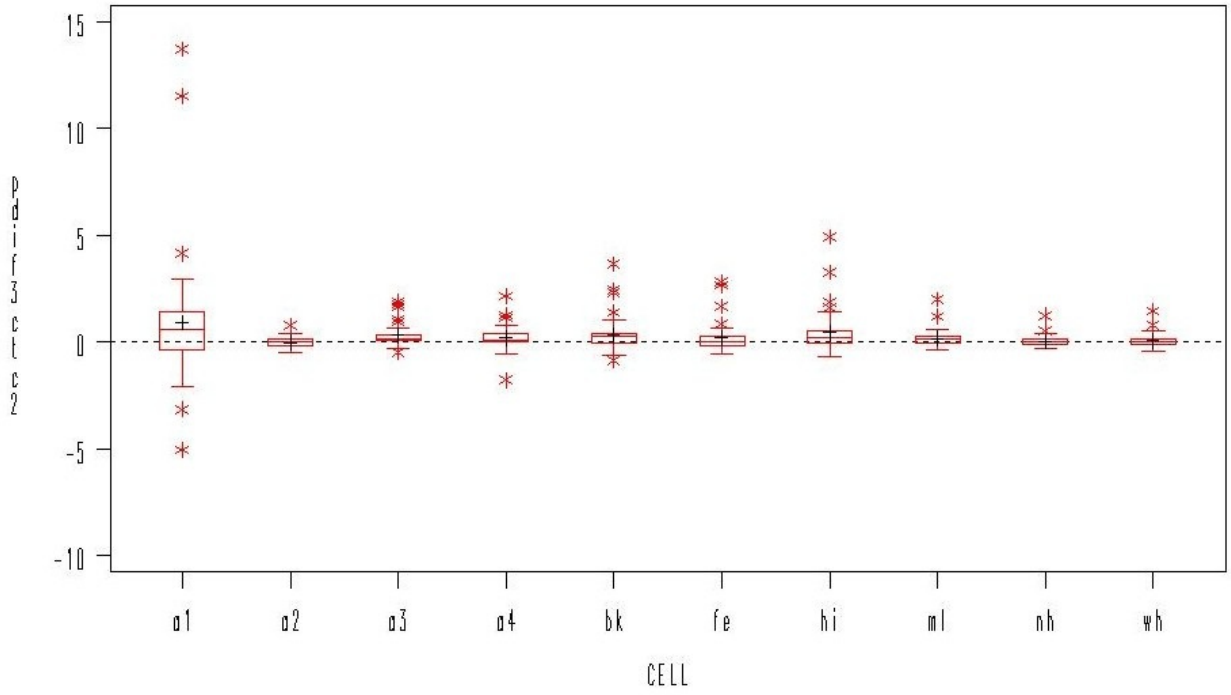
Major Type	Census 2000	3-year estimates					
		PMADs		PRMSEs		CVs	
		C2	C5	C2	C5	C2	C5
1	10505	5.26	0.00	5.93	0.00	2.62	0.00
2	558	17.95	0.00	23.25	0.00	20.91	0.00
3	11601	1.93	0.00	2.53	0.00	2.37	0.00
4	1345	12.73	0.00	15.44	0.00	10.78	0.00
5	14300	4.20	0.00	4.42	0.00	1.42	0.00
6	59	75.76	45.92	86.55	67.76	116.26	92.62
7	975	5.73	0.00	6.97	0.00	6.57	0.00

Evaluation Measures for Large (GQ≥18,000) Counties--3-Year Estimates, C5 vs. C2

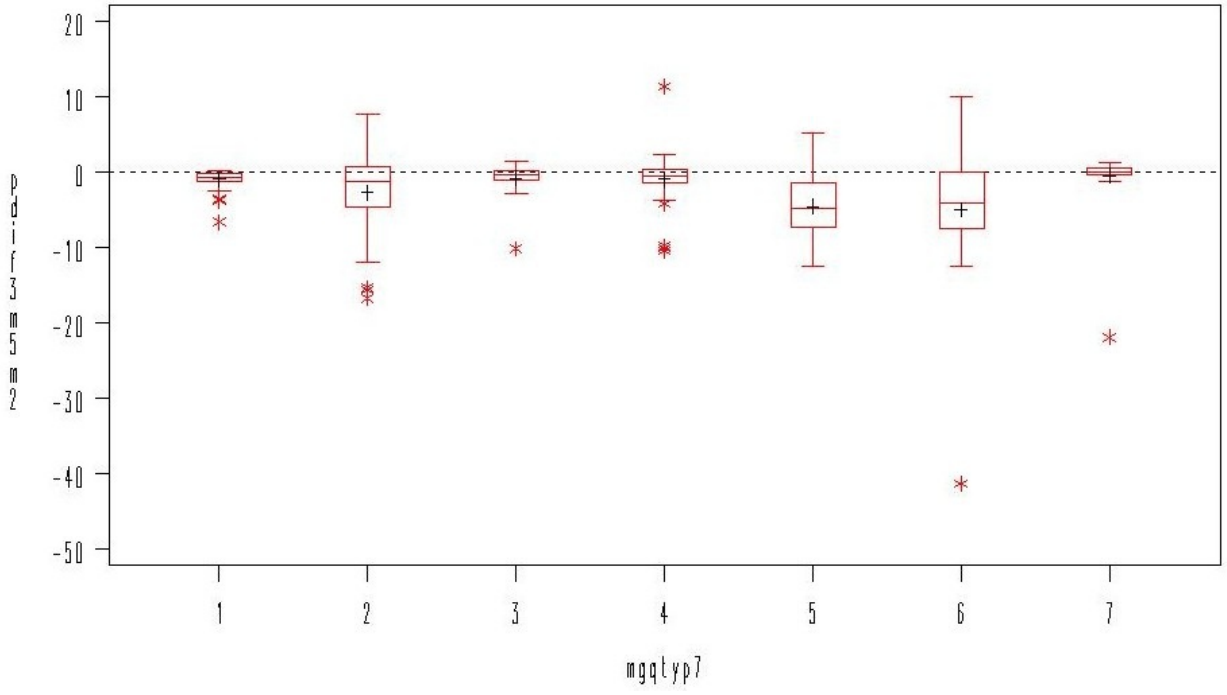
Plot 1: C5 - C2 PMAD for Demographic Characteristics



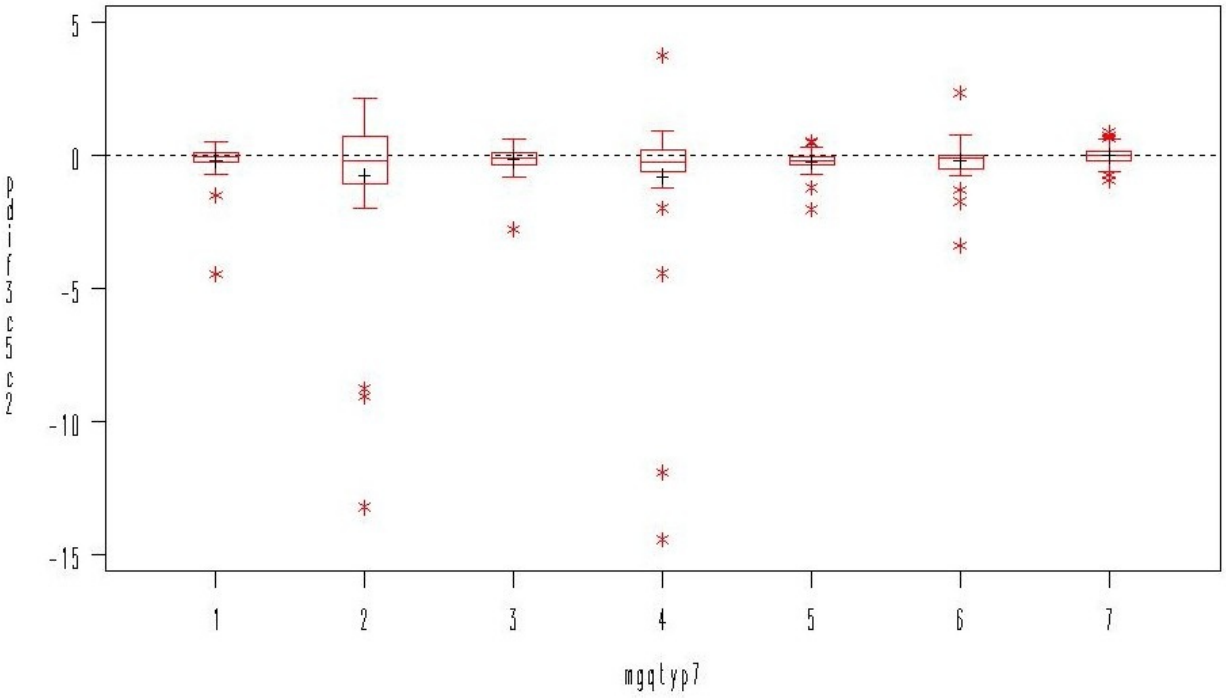
Plot 2: C5 - C2 CV for Demographic Characteristics



Plot 3: C5 - C2 PMAD for Major GQ Types (7 Types)

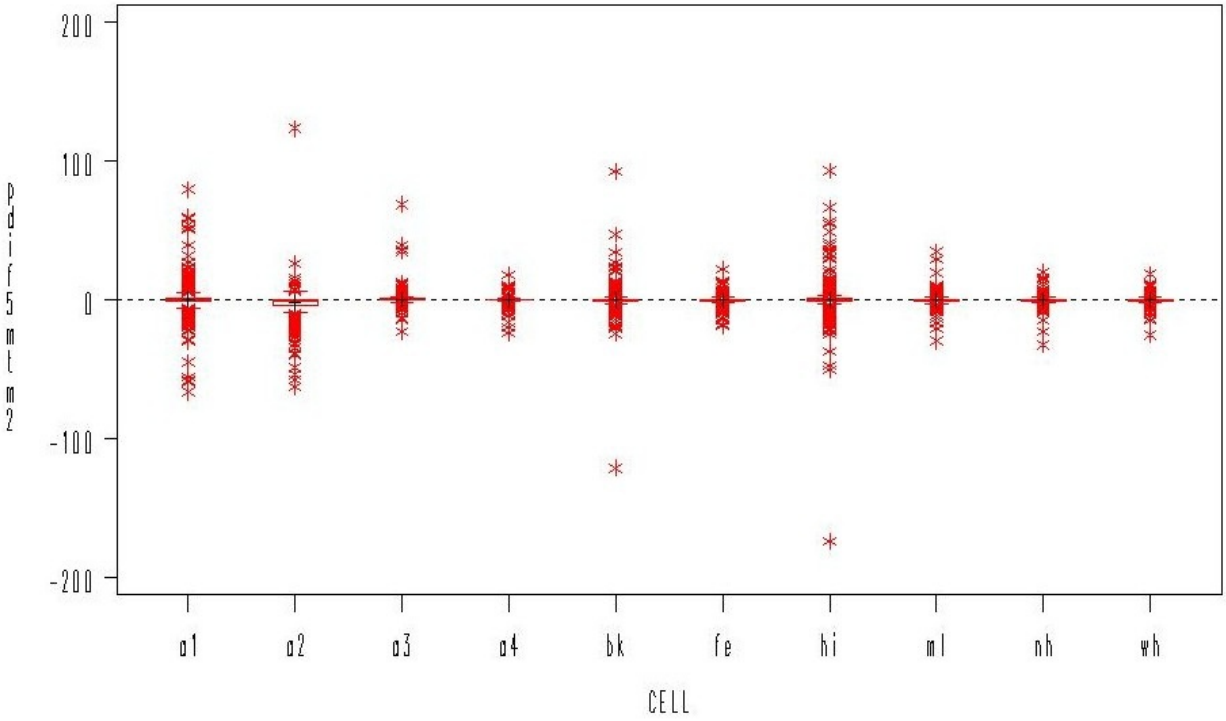


Plot 4: C5 - C2 CV for Major GQ Types (7 Types)

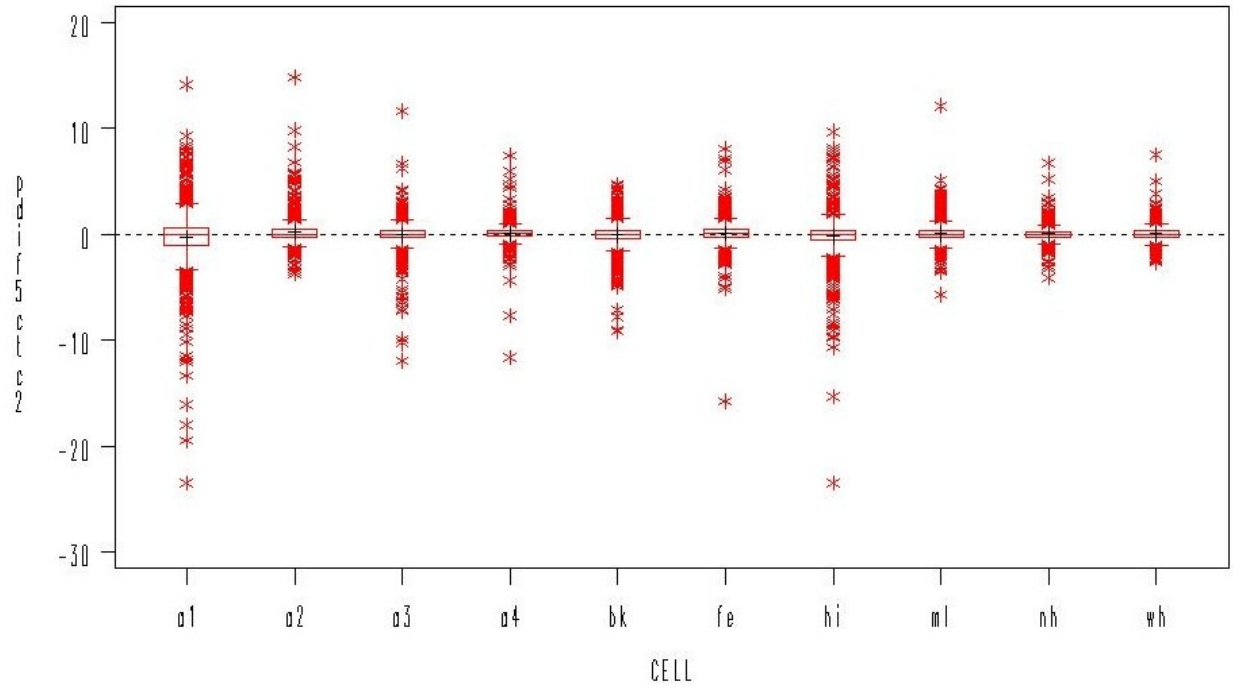


Evaluation Measures for Small (GQ<18000) Counties--5-Year Estimates, C5 vs. C2

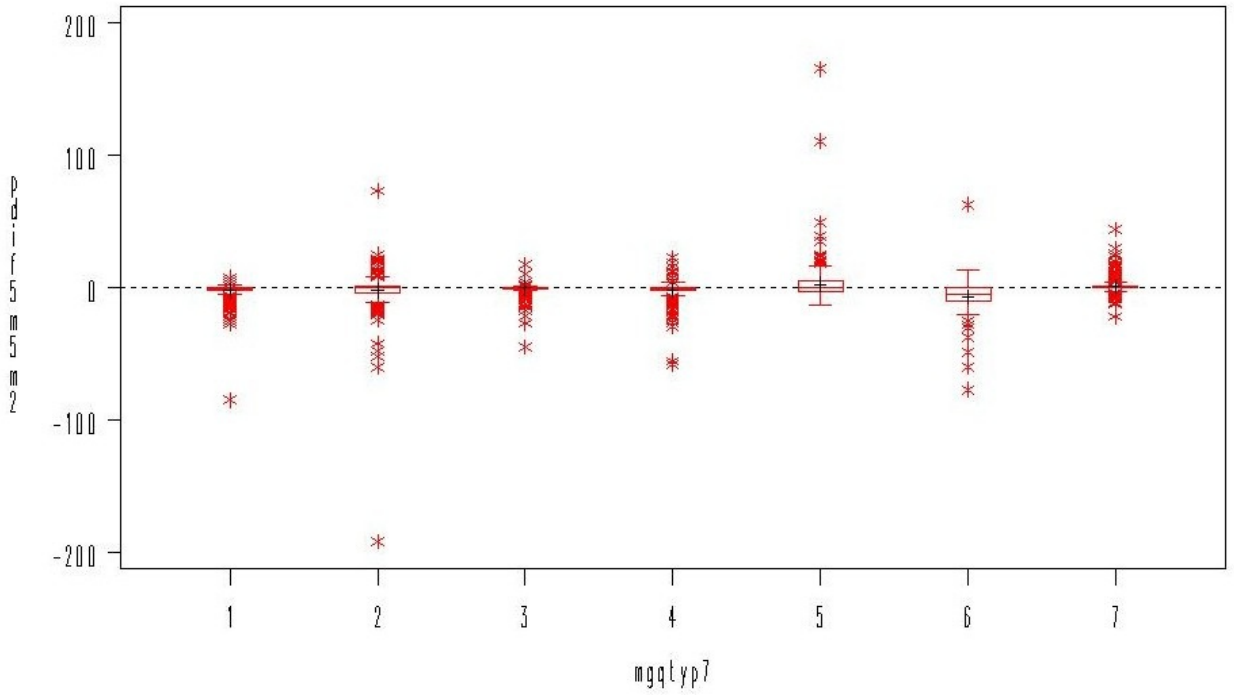
Plot 1: C5 - C2 PMAD for Demographic Characteristics



Plot 2: C5 -C2 CV for Demographic Characteristics



Plot 3: C5 - C2 PMAD for Major GQ Types (7 Types)



Plot 4: C5 - C2 CV for Major GQ Types (7 Types)