APPENDIX

SOURCE AND RELIABILITY OF THE ESTIMATES

Source of Data

The estimates of school enrollment in 1978 are based on data obtained in October 1978 in the Current Population Survey (CPS) conducted by the Bureau of the Census. The CPS sample was initially selected from the 1970 census file and is updated continuously to reflect new construction where possible. The current sample is spread over 614 areas with coverage in each of the 50 States and the District of Columbia. In the sample, approximately 56,000 occupied households are eligible for interview each month. Of this number, 2,500 occupied units on the average, are visited but interviews are not obtained because the occupants are not found at home after repeated calls or are unavailable for some other reasons. In addition to the 56,000, there are also about 9,500 sample units in an average month which are visited but are found to be vacant or otherwise not to be interviewed. For a description of CPS sample designs prior to 1978, see the detailed report for 1977 in this series.

The estimating procedure used in this survey involved the inflation of the weighted sample results to independent estimates of the total civilian noninstitutional population of the United States by age, race, and sex. These independent estimates are based on statistics from decennial censuses; statistics on births, deaths, immigration and emigration; and statistics on the strength of the Armed Forces.

Reliability of the Estimates

Since the estimates in this report are based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same questionnaires, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey—sampling and nonsampling. For estimates in this report, indications of the magnitude of sampling error are provided but the extent of nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

Sampling variability. The standard errors presented in table A-1 are primarily measures of sampling variability; that is, of the variations that occur by chance because a sample rather than the entire population was surveyed. As calculated, the standard error also partially measures the effect of certain response and enumerator errors, but it does not measure any systematic biases in the data. The sample estimate and its standard error enable one to construct confidence intervals; that is, ranges that would include with a known probability the average result of all possible samples. For example, if all possible samples were selected, each of these surveyed under the same general conditions and using the same sample design, and an estimate and its standard error were calculated from each sample, then:

1. Approximately 68 percent of the interval from one standard error below the estimate to one standard error above the estimate would include the average result of all possible samples.

2. Approximately 90 percent of the intervals from 1.6 standard errors below the estimate to 1.6 standard errors above the estimate would include the average result of all possible samples.

3. Approximately 95 percent of the interval from two standard errors below the estimate to two standard errors above the estimate would include the average result of all possible samples.

All statements of comparison in the text are significant at a 1.6 standard error level or better and most are significant at a level of more than 2.0 standard errors. This means that, for most differences cited in the text, the estimated difference is greater than twice the standard error of the difference. Statements of comparison qualified in some way (e.g., by the use of the phrase, "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

Note when using small estimates. Percent distributions are shown in this report only when the base of the percentage is greater than 75,000. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on a smaller base. Estimated numbers of persons are shown, however, even though the relative standard errors of these numbers are larger than those for the corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

Standard errors for data based on CPS. Since this is an advance report, standard errors are provided in table A-1 for estimated numbers of persons and estimated percentages for only certain characteristics which are considered the most important among the data in the report.

More detailed standard error tables for each characteristic of interest for estimated numbers of persons and estimated percentages are provided in the detailed report for 1977 in this series. A more complete source and reliability statement for the 1978 data will be published with the forthcoming 1978 detailed report.

Standard errors of estimated numbers and estimated percentages. Standard errors of estimated numbers and estimated percentages can be computed directly with formulas (1) and (2) below, respectively. The formulas are:

$$\sigma_x = \sqrt{ax^2 + bx} \qquad (1)$$

Here x is the size of the estimate and a and b are the parameters associated with the characteristic.

$$\sigma_{(x,p)} = \sqrt{\frac{b}{x} \cdot p \cdot (100 - p)} \qquad (2)$$

Here x is the size of the subclass of the population which is the base of the percentage, p is the percentage $(o \geq p \geq 100)$, and b is the parameter associated with the characteristic.

Table A-2 provides the values of the a and b parameters that are used in formulas (1) and (2) to create standard errors of estimated numbers of persons and estimated percentages.

Table A-1. Standard Errors of Estimated Numbers and Estimated Percentages of Persons 3 to 34 Years Old Enrolled in School for Total, Black and Spanish Origin Population: October 1978

(68 chances out of 100. Numbers in thousands)

Enrollment and age	Estimated numbers of persons			Standard errors of estimated numbers of persons		
	Total	Black	Spanish origin	Total	Black	Spanish origin
Total enrolled.....	58,616	8,416	3,455	257	102	114
Nursery...................	1,824	312	87	52	23	18
Private................	1,237	102	39	44	13	12
Kindergarten.............	2,989	451	231	64	28	30
Private................	496	38	33	29	8	11
Elementary..............	28,490	4,356	1,893	214	93	85
Private................	3,238	202	188	81	24	27
High school.............	15,475	2,276	868	168	73	58
Private................	1,244	65	43	50	13	13
College.................	9,938	1,020	377	138	52	38
Private................	2,410	199	62	70	23	15
Full time..............	6,979	753	231	117	45	30

AGE	Estimated percentages			Standard errors of estimated percentage		
	Total	Black	Spanish origin	Total	Black	Spanish origin
3 and 4 years.............	34.2	41.3	22.5	0.8	2.1	3.7
5 and 6 years.............	95.3	93.9	91.4	0.4	1.3	2.5
7 to 9 years..............	99.3	99.5	99.5	0.12	0.3	0.5
10 to 13 years............	99.0	98.9	98.0	0.12	0.4	0.9
14 and 15 years..........	98.4	98.5	95.2	0.2	0.6	1.9
16 and 17 years..........	89.1	91.2	83.0	0.5	1.4	3.3
18 and 19 years..........	45.4	46.2	35.7	0.8	2.6	4.3
20 and 21 years..........	29.5	25.6	16.8	0.7	2.3	3.3
22 to 24 years...........	16.3	15.0	11.8	0.5	1.6	2.4
25 to 29 years...........	9.4	8.7	8.0	0.3	1.1	1.6
30 to 34 years...........	6.4	7.9	4.2	0.3	1.1	1.3

Table A-2. Parameters to be Used for Each School Enrollment Characteristic for the Direct Computation of Standard Errors

Enrollment, race, and Spanish origin	Parameters	
	a	b
SCHOOL ENROLLMENT		
Total or White..................................	-0.000016	2064
Black or other.................................	-0.000186	2792
Spanish origin.................................	-0.000025	3851
KINDERGARTEN AND NURSERY SCHOOL ENROLLMENT		
All races......................................	-0.000126	1738
Spanish origin[1]..............................	-0.000025	3851

[1]Persons of Spanish origin may be of any race.