

SUPPRESSION

To maintain the confidentiality promised respondents and required by law, the Census Bureau takes precautions to make sure that its public data, in print or on tape, do not disclose information about particular individuals or housing units; therefore, the Bureau suppresses tabulations of characteristics for very small groups of people or housing units. On summary tapes, zeroes are entered in suppressed cells. Flag fields which indicate suppression are shown on each record. However, a zero in a cell does not automatically mean suppression. Only by checking the suppression flag can it be determined if the zero in a specific table is suppressed data or an actual count of zero.

This discussion outlines the rules for suppression, how its occurrence can be identified by the user, and how to handle it.

No Suppression

The following counts will never be suppressed:

- Total population
- Total housing units
- Seasonal/migratory housing units
- Year-round housing units
- Occupied housing units
- Vacant year-round housing units
- Count of persons and households in each race and Spanish origin group

Primary Suppression

Suppression of Population Characteristics. Characteristics of persons other than race or Spanish origin (e.g., age, relationship) are shown only if there are 15 or more persons in the geographic area. For example, on a record for a census tract with a population of 1 to 14 persons, population characteristics such as age and relationship are suppressed. Only counts for total population and the number of persons within specific race or Spanish origin groups are provided.

However, when the geographic area being summarized has 15 or more persons, no suppression of population characteristics will occur--except possibly when tables are cross-classified by race or Spanish origin. The rules for this type of suppression are outlined below in Suppression of Tables Cross-Classified by Race or Spanish Origin.

Suppression of Year-round Housing Characteristics. Characteristics of year round housing units which are not classified by occupancy status (e.g., number of rooms, plumbing facilities, etc.) are suppressed only when there are fewer than five year-round housing units in the geographic area being tabulated regardless of the number of occupied housing units or the number of persons.

Suppression of Family, Household, or Occupied Housing Characteristics. Characteristics of families, households, or occupied housing units are shown if there are at least five occupied housing units within the geographic area tabulated.

Suppression of Owner or Rental Characteristics. Distributions of data for owners or renters are shown only when the number of owners is at least five and the number of renters is also at least five.

Suppression of Tables Cross-Classified by Race or Spanish Origin. Population and housing characteristics cross-classified by race or Spanish origin are subject to an additional level of scrutiny. On this level the 15 person or five household criteria stated above are also applied to each race or Spanish origin category.

Individual cells of data for specific race or Spanish origin groups are not suppressed when there are 15 or more persons of that group in a geographic area.

The population and housing suppression criteria are applied independently of one another. For example, if there are 16 Spanish origin persons but only four households with Spanish origin householders, the person characteristics will be shown but the family, household, and housing characteristics will be suppressed.

Complementary Suppression

In some cases complementary suppression is applied to prevent the derivation of suppressed data by subtraction. For instance, when a table shows the number of persons in unit for all households and also for renters, there must be at least five owners and five renters for the renter data to be shown; otherwise the characteristics of the owners could be derived by subtracting renter data from data for all households.

Examples of Suppression--A Record

The following example shows two A record tables from the STF 2 Data Dictionary. The first Table (A13) is never suppressed since it is a basic count. The second table (A22) will only be suppressed if there are fewer than 5 year-round housing units in the geographic area tabulated.

Example:

Table A13. SPANISH ORIGIN (2) BY RACE (5)

This table has no suppression

Universe: Persons

This table has no suppression because a count of persons by race is never suppressed.

Spanish origin:
White
Black
American Indian, Eskimo, and Aleut
Asian and Pacific Islander
Other

Not of Spanish origin:
White
Black
American Indian, Eskimo, and Aleut
Asian and Pacific Islander
Other

Table A22. ROOMS (6)

SUPFLG02 applies to all cells

Universe: Condominium Housing
Units

This table will be suppressed when there are 1-4 year-round housing units in the area.

1 room
2 rooms
3 rooms
4 rooms
5 rooms
6 or more rooms

Examples of Suppression--B Record

The following examples show two B record tables from the STF 2 Data Dictionary. The first table (B8) will be suppressed if there are fewer than 15 persons of a particular race or Spanish origin category in the geographic area being summarized. The second table (B28) will have one portion of the table suppressed if there are fewer than five occupied housing units of a particular race or Spanish origin category in the geographic area, and the other portion suppressed if there are fewer than 5 owner and/or renter housing units of the same race or Spanish origin category in the geographic area.

Example:

Table B8. SEX (2) BY AGE (103)

SUPFLGB1 applies to all cells

Universe: Persons

This table will be suppressed when

Total:
Under 1 year

there are 1-14
persons in the
area.

1 year
2 year
3 years
"
"
"
to
"
"
"
99 years
100 to 104 years
105 to 109 years
110 years and over

Female:

Under 1 year
1 year
2 years
3 years
"
"
"
to
"
"
"
99 years
100 to 104 years
105 to 109 years
110 years and over

Table B28. TENURE (2) BY UNITS AT ADDRESS (6)

SUPFLGB3 applies to cells 1-6

SUPFLGB4 applies to cells 7-12

Universe: Occupied Housing Units

The portion of this
table indicating total
will be suppressed
when there are 1-4
occupied housing units
in the area.

Total:
1
2
3 and 4
5 to 9
10 or more
Mobile home or trailer

The portion of this
table indicating renter
occupied will be sup-

Renter occupied:
1
2

Pressed if there are 1-4
owner and/or renter
occupied housing units
in the area.

3 and 4
5 to 9
10 or more
Mobile home or trailer

How Suppression Affects the B Record in STF 2--Total suppression of the B record for a specified race or Spanish origin category occurs if the population in that particular category is less than 15 and the number of occupied housing units is less than 5.

B records may be partially suppressed because population and housing suppression criteria are applied independently of each other. For example, in the Asian and Pacific Islander category, if there are 16 persons but only 4 housing units for an area, the person characteristics will be shown but the family, household, and housing characteristics will be suppressed.

Programming with Suppression

Suppressed data cells contain zeroes. To distinguish between zeroes as suppression and zeroes as valid data, occurrences of suppression are identified by a series of flag fields in the geographic identification portion of each logical record. Programmers developing software should include procedures to check these fields for the presence of suppression and, if necessary, to flag the output of any cumulation which includes one or more suppressed fields.

In reviewing the data dictionary, the programmer can determine which suppression flags indicate suppression for particular tables by checking either the table description or the flag description. An example of each follows.

Example: The boxed illustration below is the table description as it appears in the data dictionary. The next portion illustrates the suppression flag to which the table description refers.

TABLE A32 CONTRACT RENT (26)
<u>SUPFLG06 applies to all cells</u>

SUPFLG06

Renter Occupied Housing Unit
Suppression Flag

A 1 in this field indicates suppression because there are fewer than five renter housing units in the geographic area being summarized or complementary suppression is applied. It will affect the

following tables:

A29

A32

A33

0 No suppression

1 Suppression

Figure 10 below, lists each suppression flag, its location within the record, and the tables or cells within tables which are affected when suppression is applied. The suppression flag field which applies to each table or portion of a table is also identified in the table description in the data dictionary. The flags are located in the geographic identification section of each record in positions 205-210.

Figure 10. Suppression Flags.

<u>Name</u>	<u>Begin</u>	<u>Table</u>
<u>Record Type A</u>		
SUPFLG01	205	A9, A10, A18, A21, A56 (cells 1-26), A60 (cells 1-18), A61 (cells 1-4), A62 (cells 1-10)
SUPFLG02	206	A22, A34, A35 (cells 1-9), A36 (cell 1), A37 (cell 1), A38 (cell 1), A39 (cells 1-4)
SUPFLG03	207	A2, A6 (cells 3-4), A14, A15 (cells 1-77), A16 (cells 1-14), A17 (cells 1-10), A19 (cells 1-42), A20, A23-25, A26 (cells 1-7), A35 (cells 19-45), A36 (cell 2), A36 (cells 5-8), A37 (cells 3-5), A38 (cells 3-5), A39 (cells 9-20)
SUPFLG04	208	A15 (cells 78-154), A16 (cells 15-28), A17 (cells 11-20), A19 (cells 43-84), A26 (cells 8-14), A35 (cells 10-18), A36 (cells 3-4), A37 (cell 2), A38 (cell 2), A39 (cells 5-8)
SUPFLG05	209	A27, A28, A30, A31
SUPFLG06	210	A29, A32, A33
<u>Record Type B</u>		
SUPFLGB1	205	B4-B13, B16, B17, B21

SUPFLGB2	206	-
SUPFLGB3	207	B2, B14, B15, B18, B19 (cell 1), B20 (cells 1-9), B22 (cell 1), B23 (cells 1-9), B24 (cell 1), B25 (cell 1), B26 (cells 1-4), B27 (cells 1-14), B28 (cells 1-6), B29 (cells 1-2), B30 (cells 1-2), B31 (cells 1-4), B32 (cells 1-4), B33 (cells 1-3), B34 (cells 1-3), B35 (cell 1), B36 (cell 1)
SUPFLGB4	208	B20 (cells 10-18), B22 (cells 2-3), B23 (cells 10-18), B24 B24 (cells 2-3), B25 (cell 2), B26 (cells 5-8), B27 (cells 15-28), B28 (cells 7-12), B29 (cells 3-4), B30 (cells 3-4), B31 (cells 5-8), B32 (cells 5-8), B33 (cells 4-6), B34 (cells 4-6), B35 (cell 2), B36 (cell 2)
SUPFLGB5	209	B19 (cell 4), B37-B39
SUPFLGB6	210	B19 (cells 2, 3, 5, 6), B40-B42

Evaluating the Effect of Suppression

In most cases, suppressed data values are small (fewer than 5 or 15) except where a large population is affected by complementary suppression. Therefore, in certain noncritical applications, users may simplify programming operations by ignoring suppression and treating suppressed cells as zero cells. However, when geographic entities are being summed to higher levels or new geographic areas are being created, suppression will usually result in a downward bias in the totals.

