Disclosure

A *disclosure* would occur if someone could infer data values (e.g. dollar value of sales) for a particular business, that has provided information via a census or sample survey form, under a pledge of confidentiality.

The Census Bureau is committed to confidentiality and constantly pursues new procedures, technologies, and methodologies to safeguard individual data.

The Census Bureau has reviewed the 2017 Economic Census data products for unauthorized disclosure of confidential information and has approved the disclosure practices applied. (Approval ID: CBDRB-FY19-537)

Methods of Preventing Disclosure

Disclosure avoidance is the process for protecting the confidentiality of data. The Census Bureau uses two methods of preventing disclosure of business data, *cell suppression* and *noise infusion*.

Cell Suppression

Some of the data in economic census tables are withheld to protect the confidentiality of information reported by individual businesses. Data withheld are replaced with D's in appropriate data cells.

Cell suppression protects the confidentiality of individual businesses by replacing cell values with symbols in tables, where the amount of the cell if it were known, would allow one to estimate a single contributor's value too closely. This occurs when there are very few contributors, or when there are one or two large contributors that dominate the aggregate statistic.

The cells that must be protected are called *primary suppressions*.

To make sure the primary suppressions cannot be closely estimated by subtracting the other cells in the table from the higher-level totals, additional cells may also be suppressed. These additional suppressed cells are called *complementary suppressions*.

The process of suppression does not usually change the higher-level totals. Values for cells that are not suppressed remain unchanged. Before the Census Bureau releases data, computer programs and analysts check published tables for both primary and complementary disclosures.

Establishment counts are not considered to be disclosures, so this information is published in all tables.

Rounding, either from the way data is collected or published, may effect whether a small number is considered a primary.

Ranges are sometimes used in place of D's to suppress sensitive data, but still provide meaningful information.

Background on cell suppression, cell sensitivity and the protection of statistical data can be obtain from the Federal Committee on Statistical Methodology's Working Paper 22.

Federal Committee on Statistical Methodology's Working Paper 22 [<1.0 MB]

Cell Suppression is used by the following programs:

- Annual Survey of Manufactures
- Economic Census of the United States
- County Business Patterns, prior to the 2007 reference year
- Nonemployer Statistics, prior to the 2005 reference year
- Survey of Business Owners, prior to the 2007 reference year

Noise Infusion

Noise infusion is an alternative to cell suppression, that allows for the publishing of more data. By marginally adjusting (perturbing) each respondent's data, data for individual businesses can be camouflaged. Most of the resulting aggregated statistics are distorted by a relatively small amount. Some cells may be suppressed for additional protection from disclosure, or because the quality of the data does not meet publication standards. Though some of these suppressed cells may be derived by subtraction, the results are not official and may differ substantially from the true estimate.

Noise infusion is applied to the following economic tables:

- Commodity Flow Survey, starting with the 2007 reference year
- Economic Census of Island Areas, starting with the 2007 reference year
- Nonemployer Statistics, starting with the 2005 reference year

- County Business Patterns, starting with the 2007 reference year
- Survey of Business Owners, starting with the 2007 reference year

For more technical information on noise infusion, read "Using Noise for Disclosure Limitation of Establishment Tabular Data" by Timothy Evans, Laura Zayatz and John Slanta in the Journal of Official Statistics (1998).

Using Noise for Disclosure Limitation of Establishment Tabular Data [<1.0 MB]

Disclosure Limitation is Required by Law

The Census Bureau is bound by Title 13 and Title 26 of the United States Code. Title 13 provides the authority to conduct censuses and surveys, and both Titles 13 and 26 provide strong protections for information collected from individuals and businesses.

Title 13 - Protection of Confidential Information

Details on the Title 13 law pertaining to the U.S. Census Bureau.

Title 26

The U.S. Code is a consolidation & codification by subject matter of the general & permanent laws of the U.S. prepared by the U.S. House of Representatives.

Other federal laws, including the Confidential Information Protection and Statistical Efficiency Act and the Privacy Act, also reinforce these protections.

Confidential Information Protection and Statistical Efficiency Act [<1.0 MB]

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