

1SUPPORTING STATEMENT
U.S. Department of Commerce
U.S. Census Bureau
Commodity Flow Survey Component of the 2017 Economic Census
OMB Control Number 0607-0932

B. Collections of Information Employing Statistical Methods

1. Universe and Sample Selection

The sample for the 2017 Commodity Flow Survey will be selected using a stratified three-stage design in which the first-stage sampling units are establishments, the second-stage sampling units are groups of four 1-week periods (reporting weeks) within the survey year, and the third-stage sampling units are shipments.

a. First Stage - Establishment Selection

The first stage sample of approximately 100,000 employer establishments will be selected from a sampling frame extracted from the U.S. Census Bureau's Business Register. The Business Register is a comprehensive centralized database of business establishments throughout the United States. It is based upon information from the Economic Census and is updated using the Company Organization Survey results and administrative data from other government agencies, such as the Internal Revenue Service. The universe of employer establishments in-scope to the CFS is approximately 725,000.

For sampling purposes the universe will be stratified by geography and by industry. Geographic stratification will primarily be state and major metropolitan areas. Industry stratification will be at the three or four digit NAICS level. Some special strata will be created to produce better estimates of shipments of hazardous materials and certain rare modes. Establishments whose estimated annual value of shipments exceed designated shipment value thresholds will be selected with certainty. The remaining establishments will be selected using simple random sampling within substrata based on estimated value of shipments. Studies were conducted to determine the optimal substrata boundaries for desired levels of reliability.

b. Second Stage - Reporting Week Assignment

The frame for the second stage of sampling consists of the 52 one-week periods from January 2017 to December 2017. Each establishment selected into the 2017 CFS sample will be systematically assigned to report for four reporting weeks--one in each quarter of 2017. Each of the four weeks will be in the same relative position of the quarter. For example, an establishment might be requested to report data for the 5th, 18th, 31st, and 44th weeks of 2017. In this instance, each reporting week corresponds to the 5th week of each quarter.

c. Third Stage - Shipment Selection

For each of the four reporting weeks in which an establishment is asked to report, the respondent will be requested to construct a sampling frame consisting of all shipments made by the establishment in the reporting week. Each respondent will be asked to count or estimate the total number of shipments comprising the sampling frame and to record this number on the questionnaire. For each assigned reporting week, if an establishment makes more than 40 shipments during that week, the respondent will be asked to select a systematic sample of the establishment's shipments and to provide information only about the selected shipments. Sampling rates are designed to produce a shipment sample size between 20 and 80 shipments. If an establishment makes 40 or fewer shipments during that week, the respondent will be asked to provide information about all of these shipments (i.e., no sampling will be required).

d. Estimation

Estimated totals (e.g., value of shipments, tons, ton-miles) will be produced as the sum of weighted shipment data. Percent change and percent-of-total estimates will be derived using the appropriate estimated totals. Estimates of average miles per shipment will be computed by dividing an estimate of the total miles traveled by the estimated number of shipments.

Each shipment will have associated with it a single tabulation weight, which will be used in computing all estimates to which the shipment contributes. The tabulation weight will be a product of seven different component weights. A description of each component weight follows.

The shipment weight and shipment non-response weight ensures that the sample of reported shipments represent all of the establishment's shipments in the reporting week. The quarter weight and quarter non-response weight inflate an establishment's estimate for the weeks reported to reflect an entire year's worth of shipments. The establishment-level adjustment weight will use 2017 Economic Census data to correct for individual establishment sampling and non-sampling error. The establishment or sample weight is the reciprocal of the probability of being selected into the first stage sample. Finally the industry-level adjustment weight will use 2017 Economic Census summary tabulations at the NAICS and state levels to account for establishment non-response and changes to the universe of establishments between the time of first stage sample selection and the data collection year.

2. Procedures for Collecting Data

In late 2016, all establishments selected for the CFS will be sent a pre-notice letter. This letter will identify the shipping address for which data should be reported as well as indicating the specific reporting periods for each quarter in 2017. In the first quarter, based on the relative size of the sampled establishment, approximately 30,000 small establishments will receive a paper questionnaire while the remainder will receive a letter asking them to report online. All selected establishments will be asked to select and report on a sample of their shipments for a specific one week reporting period. This sample will be based on the total number of shipments made by the establishment during that period. On average, respondents will report information for approximately 30 shipments per quarter. Responses are mailed back to the U.S. Census Bureau or completed using the on-line reporting instrument.

For all subsequent quarters, an establishment will only be mailed a paper form if they completed the prior quarter via paper or they did not respond in the prior quarter and their last mailing was a paper form. All past due letters will ask the establishment to report using the on-line reporting instrument.

We expect a response from 80% of the establishments.

3. Methods for Maximizing Response Rates

This information collection will maximize response through the following actions:

- An advance mailing collection, conducted February - May 2016, obtained updated establishment contact information (e.g., appropriate contact person, address, telephone number), and pre-screened specific establishments for eligibility prior to sample selection. This collection was separately approved by OMB under Approval Number 0607-0921.
- Survey materials that emphasize the mandatory and confidential nature of U.S. Census reports, as provided by Title 13, U.S.C.
- Improved questionnaires and instructions that incorporate clear reporting directions. All changes and improvements were field tested November 2015-February 2016.
- Electronic reporting instrument available for all four quarters. The electronic instrument will also compute the shipment sampling interval for the respondent.
- Toll-free telephone assistance for any business that has questions about completing its CFS questionnaires.
- A business help site (BHS) will provide respondents with additional information about the survey, including answers to frequently asked questions and additional assistance with survey reporting.
- Systematic mail follow-up for non-response, supplemented by telephone follow-up for selected companies.
- Working with respondents to establish special reporting arrangements, including a centralized reporting option, and time extensions when necessary.

4. Tests of Procedures

The U.S. Census Bureau will use procedures based on results of cognitive testing, experience gained from the 2012 CFS, as well as the considerable body of experience with related economic censuses and surveys.

5. Contacts for Planning, Implementation and Statistical Aspects

The 2017 planning and implementation is conducted under the direction of:

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Attachments

A. Proposed Survey Materials

- (1) Questionnaire CFS-1000 (17)
- (2) Instruction Guide CFS-1100 (17)
- (3) SCTG Commodity Codes CFS-1200 (17)
- (4) Selected Screenshots from On-Line Questionnaire
- (5) Pre-Notice Letter CFS-PRE
- (6) Initial Cover Letter with Paper Questionnaire Q1 CFS-L1F
- (7) Initial Letter On-Line Reporting Q1 CFS-L1E
- (8) Follow-up Letter CFS-L2E
- (9) Flyer CFS-FLYER
- (10) Initial Cover Letter with Paper Questionnaire Q2-Q4 CFS-L3F
- (11) Initial Letter On-Line Reporting Q2-Q4 CFS-L3E

B. Summary of Changes to the 2017 Commodity Flow Survey Questionnaire

C. Data User Comment from Federal Register Presubmission