

**Department of Commerce
U.S. Census Bureau
OMB Information Collection Request
Quarterly Services Survey
OMB Control Number 0607-0907**

B. Collections of Information Employing Statistical Methods

1. Universe and Respondent Selection

Sampling Frame: The Quarterly Services Survey (QSS) sampling frame is the Service Annual Survey (SAS) sample and has the same two types of sampling units: single establishment firms, and multiple-establishment firms representing clusters of two or more establishments owned or controlled by the same firm. The information used to create these sampling units was extracted from data collected as part of the 2012 Economic Census and from establishment records contained on the Census Bureau's Business Register as updated to December 2015. The sample is redrawn approximately every five to seven years to redistribute reporting burden and to introduce sampling and processing efficiencies.

Stratification: The primary stratification of the QSS frame is by industry, as well as tax status and private/government ownership for some industries based on the detail required for publication. We publish QSS estimates for less detailed industry groupings than for SAS estimates. Therefore, the industry stratification for the QSS sample is broader than the industry stratification used for the SAS sample. There are 164 primary strata for QSS.

Within each industry stratum, we substratify the sampling units by a measure of size related to their annual revenue. A substratum size boundary (or cutoff) is determined, and subsequently used to divide the certainty units from the noncertainty units. We base these cutoffs on a statistical analysis of data extracted from the Census Bureau's Business Register. We also use this analysis to determine the number of size substrata for each industry group and to set sampling rates needed to achieve specified sampling variability objectives on revenue estimates for different industry groups.

Sample Selection: We select the QSS sample independently within each size substratum contained in an industry stratum. Sample selection is a two-step process and begins by identifying the firms selected with certainty. If a firm's estimated annual revenue is greater than the corresponding certainty cutoff for the stratum in which that firm exists, that firm is selected into the sample with certainty. This means they are sure to be selected and will represent only themselves (i.e., have a selection probability of one and a sampling weight of one). The selection procedure for the noncertainty portion of the sample follows a systematic, probability proportional-to-size scheme, where size is defined as the sampling unit's SAS weight. Because the QSS sample is an independently selected subsample, it is possible that we select some units in the SAS sample at a lower sampling rate than desired for the QSS sample. We include such a unit in the QSS sample and assign a sampling weight equal to the

unit's SAS sampling weight. The maximum sampling weight for a sampling unit selected for the QSS sample is 750.

For Accommodation (NAICS 721), the same sampling frame and stratification methodology described above is used for NAICS 721. For sample selection, all sampling units in NAICS 721 identified as certainty units are included in both the QSS and the SAS. Within each noncertainty stratum, a simple random sample of sampling units is selected to be in the SAS sample. These selected noncertainties are systematically split into two equal groups. One group is canvassed for both the QSS and the SAS, the other group is canvassed for only the SAS.

At the time of initial sampling there were approximately 19,500 firms selected for QSS. Of this number, about 4,000 were selected with certainty (probability equal to one), and about 15,500 are smaller firms selected with a probability less than one. Approximately 6,300 of these firms are multi-establishments that have activities in several NAICS covered by the survey, which account for approximately an additional 7,000 survey units.

Sample Maintenance: Periodically, we update the QSS sample to represent Employer Identification Numbers (EINs) newly assigned or reactivated since the initial sample selection. The new EINs, called births, are EINs recently assigned by the Internal Revenue Service (IRS) and assigned an industry classification (if possible) by the Social Security Administration. These EINs generally represent a single establishment firm.

We sample births on a quarterly basis using a two-phase selection procedure. To be eligible for selection, a birth either must have no industry classification or be classified in an industry within the scope of the Annual Retail Trade Survey (ARTS), the Annual Wholesale Trade Survey (AWTS), or SAS, and it must meet certain criteria regarding its quarterly payroll. In the first phase, we stratify these EINs by industry and a measure of size based on quarterly payroll. A relatively large sample is selected using stratified systematic sampling. Sampled EINs are canvassed to obtain a more reliable measure of size, consisting of sales or receipts for two recent months, company affiliation information, and a new or more detailed industry classification. The sales data are used as a measure of size for second phase sampling.

Using this more reliable information, in the second phase we subject the selected birth EINs from the first phase to probability-proportional-to-size sampling with overall probabilities equivalent to those used in drawing the initial ARTS, AWTS, and SAS samples. The births selected for the QSS sample are a subset of the births selected for the SAS sample. These EINs are selected using probability-proportional-to-size sampling with overall stratum probabilities equivalent to those used in selecting the initial QSS sample. Because of the time it takes for a new employer firm to acquire an EIN from the IRS, and because of the time needed to accomplish the two-phase birth-selection procedure, we add births to the samples approximately nine months after they begin operation.

The IRS's Business Master File (BMF) indicates the business activity of an EIN. An EIN is considered to be BMF active if that EIN is used to report payroll information for the employees of the business represented by that EIN. A selected EIN is mailed and tabulated for a survey as long as it is BMF active. Once it goes BMF inactive, it is no longer mailed a survey questionnaire and is considered a delete (or death). If at any time the EIN becomes active again, a questionnaire should once again be mailed, and it is considered a reactivation. In this case, its previously assigned tabulation characteristics such as weight, NAICS code, etc. will be used. Each quarter, in addition to checking for birth EINs, we check against the current Business Register to determine if any EINs on the survey have become BMF inactive or if inactive survey units have been reactivated.

Updates (i.e., births, reactivations, and deaths) to the QSS sample occur in the same manner and at the same time as updates to the SAS sample.

Any new establishments that a firm acquires, even if under new or different EINs, may be added to the sample as part of the initial sampling unit's representation, i.e., with same initial sampling weight. For noncertainty firms, additional evaluation may be done in some instances to determine the feasibility of adding the new establishments by evaluating the effect of the new establishments on the industry estimates.

Approximately every five to seven years, a new sample is drawn. This process is performed in order to:

- ensure each sample is representative of its target population,
- improve the efficiency of each sample,
- incorporate updates to the industry classification structure,
- expand industry coverage of the survey,
- update questions and instructions to obtain more accurate data, and
- redistribute burden for small and medium size businesses.

The current Quarterly Services Survey sample was introduced with the release of estimates for the third quarter of 2017 on November 17, 2017.

Response Rates: For 2019, the average response (in terms of dollar volume) to this voluntary survey was approximately 72 percent. The 2019 average response (in terms of units) to this voluntary survey was about 54 percent.

2. Procedures for Collecting Information

Project Schedule: Report forms are mailed to respondents at the end of each calendar quarter. They are expected to be completed 10 days after receipt. Respondents have the option of reporting by mail, Internet, or by telephone.

Non-Response: Data are imputed using survey data and administrative data as input for unit non-response, item non-response, and for responses that fail computer or analyst edits.

Estimation Procedures: Totals are computed as the sum of weighted data (reported and imputed) for all selected sampling units that meet the sample canvass and tabulation criteria given above. The weight for a given sampling unit is the reciprocal of its probability of selection into the sample. Variances are estimated using the method of random groups.

Benchmarking: Published estimates from the QSS are benchmarked using the latest SAS results as they become available as described on the website below.
https://www.census.gov/services/qss/how_the_data_are_collected.html.

Seasonal Adjustment: Seasonal factors are computed each quarter using the survey estimates as input to the Census Bureau's X-13ARIMA-SEATS software. During a non-benchmarking quarter, these factors are used to produce seasonally adjusted quarterly revenue estimates for the prior five quarters. After benchmarking revisions are applied in the fourth quarter of each sample year, new seasonal factors are computed using the revised estimates as input. These new factors are then used to produce seasonally adjusted quarterly revenue estimates for all available quarters for select industries.

The X-13ARIMA-SEATS software is available from the Census Bureau's Internet site at <http://www.census.gov/srd/www/x13as/>.

Degree of Accuracy: All publications and news releases of the QSS containing inferences and comparisons of key estimates based on sample data are required to have coefficients of variation (CV) that are 30 percent or lower. The average overall CV for 2019 was 1.0, and the average overall CV for 2018 was 0.9.

3. **Methods to Maximize Response**

The Census Bureau will take the following actions to maximize response rates:

- Customize mailing arrangements for selected large firms
- Conduct outside consultations
- Visit companies
- Offer Internet reporting
- Customize computer-imprinted instructions to clarify criteria for selected industries
- Provide a Web site with responses to Frequently Asked Questions
- Plan follow-up actions to contact delinquent respondents including reminder e-mail notifications
- Provide a toll-free number that companies can call for assistance

In instances where the survey coverage requires obtaining data from various subsidiaries or operating units of the company, specialized arrangements will be established to mail separate forms to each subsidiary or operating unit of the company. Customized mailings of this type have proven to be effective in obtaining

more timely response and thus reducing follow-up costs, minimizing errors in reporting that result from coverage problems, and reducing respondent burden.

Follow-up actions will be taken for delinquent companies in the QSS. Methods include reminder email notifications and telephone follow-up.

In addition to the traditional method of reporting (mail-back), the QSS provides respondents the option of reporting on-line (Centurion) or by telephone. Such options have provided an incentive for firms to report the required information in the QSS. As a result, historical trend patterns yield a total quantity response rate of approximately 72 percent as referenced above.

Finally, in an effort to reassess response during significant economic events, processing and data quality were monitored throughout 2020 due to the Coronavirus pandemic. Quality metrics, such as response rate standards for publication, were continuously monitored and evaluated throughout the data collection period for the published industries. The Census Bureau observed lower response in the first quarter of 2020 because of the Coronavirus pandemic. As a result, the Census Bureau utilized two-quarter forms for data collection in the second quarter of 2020 to allow companies an opportunity to report for both quarters. Response returned to historical levels, so the Census Bureau has not utilized two-quarter data collection for other quarters of 2020.

4. Tests of Procedures or Methods

We continuously edit the reported data and monitor procedures and methods for data collection in an effort to reduce reporting burden and improve data quality.

5. Contacts for Statistical Aspects and Data Collection

Sample design and statistical methodology questions should be directed to James Hunt, Methodology Director for Retail, Wholesale and Services Programs, Economic Statistical Methods Division, U.S. Census Bureau, 301-763-6599. Direct all other questions to Scott A. Scheleur, Assistant Division Chief for Consumption & Wholesale Indicators, Economic Indicators Division, U.S. Census Bureau, 301-763-7128.

List of Attachments

Attachment 1 – QSS form matrix
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Attachment 3 – QSS-1E
Attachment 4 – QSS-1pA
Attachment 5 – QSS-1pE
Attachment 6 – QSS-2A
Attachment 7 – QSS-2E
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Attachment 29 – BEA Letter of Support
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