

**Supporting Statement
Quarterly Services Survey**

B. Collections of Information Employing Statistical Methods

1. Universe and Respondent Selection

The QSS is a subsample of firms selected from the SAS sample of the industries listed above.

Currently, there are approximately 6,000 firms selected for the current QSS. Of this number, about 1,000 are large companies selected with certainty (probability equal to one), and about 5,000 are smaller firms selected with a probability less than one. The current firms represent NAICS 51; 54; 56; 622; and 623. When the QSS expands, we will add to the sample 1,250 certainty companies and 5750 noncertainty firms to cover NAICS subsectors 484; 492; 493; 532; 621; 624; 71; 811; 812; and 813, resulting in a total sample of approximately 13,000 firms.

2. Sampling Methodology and Estimating Procedures

a. Sampling Methodology

The sampling frame for the QSS sample is a subset of the SAS sample and has the same types of sampling units as the SAS frame—large, multiple-establishment firms and Employer Identification Numbers (EINs). Both sampling units represent clusters of one or more establishments owned or controlled by the same firm.

The primary stratification of the QSS frame is by industry group based on the detail required for the QSS publication. We use less detailed industry groupings to produce QSS estimates than the industry groupings used to produce SAS estimates. Therefore, the industry stratification for the QSS sample is broader than the industry stratification used for the SAS sample.

Within industry group, we substratify the sampling units by a measure of size related to their annual receipts as reported in SAS. We select sampling units expected to have a large effect on the precision of the estimates “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). To identify the certainty units, we determine a substratum boundary (or cutoff) that divides 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 receipts estimates for different industry groups.

We select the QSS sample independently within each size substratum contained in an industry stratum. The actual selection procedure follows a systematic, probability proportional-to-size scheme. 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 an EIN selected for the QSS sample is about 750.

Periodically, we update the QSS sample to represent EINs issued since the initial sample selection. These new EINs, called births, are EINs recently assigned by the Internal Revenue Service (IRS) on the latest available IRS mailing list for FICA taxpayers and assigned an industry (if possible) by the Social Security Administration.

We sample EIN births on a quarterly basis using a two-phase selection procedure. To be eligible for selection, a birth must either have no industry classification or be classified in an industry within the scope of the Annual Retail Trade Survey (ARTS), the Annual Trade Survey (ATS), or SAS, and it must meet certain criteria regarding its number of paid employees or quarterly payroll. In the first phase, we stratify births by industry and a measure of size based on expected employment or quarterly payroll. A relatively large sample is drawn and canvassed to obtain a more reliable measure of size, consisting of sales in two recent months, and a new or more detailed industry classification.

Using this more reliable information, we subject the selected births from the first phase to probability proportional-to-size sampling with overall probabilities equivalent to those used in drawing the initial ARTS, ATS, and SAS samples. 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.

b. Estimation Procedure

Estimates of total quarterly receipts are computed as the product of a direct expansion estimate and a ratio estimate. The direct expansion estimate of total quarterly receipts is the sum of the weighted quarterly

receipts for each reporting unit (reported or imputed). The assigned weight for each unit is the reciprocal of its probability of selection into the QSS sample. Then, we adjust the quarterly receipts estimates to results of the 2004 Service Annual Survey by multiplying them by a ratio. The numerator and denominator of each ratio are as follows:

- The numerator is the census-adjusted, annual receipts estimate for 2004 for employers obtained from the 2004 Service Annual Survey. See the 2004 Service Annual Survey Report for a description of how these estimates are derived.
- The denominator is the sum of the four new quarterly receipts totals for 2004, obtained from the Quarterly Services Survey sample.

Note that each detailed industry has its own adjustment ratio and the same ratio is applied to all quarterly receipts estimates published from the fourth quarter of 2003 through the fourth quarter of 2005. We obtain adjusted estimates of quarterly receipts for aggregate industry levels by summing the adjusted estimates for the appropriate detail industries comprising the aggregate.

Because we only have data for the fourth quarter of 2004 for hospitals or nursing and residential care facilities, we do not adjust the quarterly receipts estimates for these industries to results of the 2004 Service Annual Survey. Instead, we will adjust the quarterly receipts estimates for these industries when results of the 2005 Service Annual Survey are available.

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;
- Customize computer-imprinted instructions to clarify reporting criteria for selected industries;
- Offer Internet reporting;
- Provide a web site with responses to frequently asked questions;
- Plan follow-up actions to contact delinquent forms;
- Provide a facsimile option to submit form;
- 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.

The follow-up actions listed below with approximate time frames will be taken for delinquent companies in the QSS.

- Facsimile Reminder with form - One week after due date.
- Telephone follow-up - Two weeks after due date.

In addition to the traditional method of reporting (mail-back), the QSS provides respondents the option of reporting on-line (Censustaker), by telephone, or by facsimile. Such options have provided an incentive for firms to report the required information in the QSS. As a result, historical trend patterns yield a report response of approximately 80% percent .

4. Tests of Procedures

The Census Bureau will use procedures based on the results and experiences gained during cognitive interviewing of the QSS, as well as the considerable body of experience with related economic censuses and surveys.

5. Contacts for Statistical Aspects and Data Collection

Sample design and statistical methodology questions should be directed to Ruth Detlefsen, Assistant Division Chief for Research and Methodology, Service Sector Statistics Division, U.S. Census Bureau, 301-763-5171. Direct all other questions to Donna Hambric, Assistant Division Chief for Current Service and Transportation Programs, Service Sector Statistics Division, U.S. Census Bureau, 301-763-2639.

List of Attachments

1. QSS - Questionnaire Matrix
2. QSS - Questionnaires
3. Cover Letter
4. Letter of support from BEA