

SUPPORTING STATEMENT
U.S. Department of Commerce
U.S. Census Bureau
Monthly Retail Trade Survey (MRTS)
OMB Control No. 0607-0717

PART B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Universe and Respondent Selection

Sample Revision: A sample revision is the process used to re-design and re-select the samples for many of the Census Bureau's surveys of the retail, wholesale, and service industries. We do a sample revision approximately every 5-7 years. This process is performed 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
- redistribute burden for small and medium size businesses

The latest retail sample was introduced in April 2013.

Sampling Frame: The sampling frame used for the MRTS has two types of sampling units: Employer Identification Numbers (EINs) and large, multiple- establishment firms. Both sampling units represent clusters of one 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 2007 Economic Census and from establishment records contained in the Census Bureau's Business Register as updated to December 2010.

To create the sampling frame, we extract the records for all employer establishments located in the United States and classified in the Retail Trade sector as defined by the 2007 NAICS. For these establishments we extract sales, payroll, employment, name and address information, as well as primary identifiers and, for establishments owned by multi-unit firms, associated EINs. To create the sampling units for multi-unit firms, we aggregate the economic data of the establishments owned by these firms to an EIN level by tabulating the establishment data for all retail establishments associated with the same EIN. Similarly, we aggregate the data to a multi-unit firm level by tabulating the establishment data for all retail establishments associated with the same firm identifier. No aggregation is necessary to put single-unit establishment information on an EIN basis or a firm basis. Thus, the sampling units created for single-unit firms simultaneously represent establishment, EIN, and firm information.

Stratification: The primary stratification of the sampling frame is by industry group based on the detail required for publication. We further stratify the sampling units within industry group by a measure of size (substratify) related to their annual sales. Sampling units expected to have a large effect on the precision of the estimates are selected "with certainty." This means they are sure to be selected and will represent only themselves (i.e., have a selection probability of 1 and a sampling weight of 1). Within each industry stratum, 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 from the 2007 Economic Census. Accordingly, these values are on a 2007 sales basis. We also used this analysis to determine the number of size substrata for each industry stratum and to set preliminary sampling rates needed to achieve specified sampling variability constraints on sales estimates for different industry groups. The size substrata and sampling rates are later updated through analysis of the sampling frame.

Sample Selection: The first step in the sample selection is to identify firms selected with certainty. If a firm's annual sales or end-of-year inventories were greater than the corresponding certainty cutoff, that firm was selected into the MRTS sample with certainty.

All firms not selected with certainty were subjected to sampling on an EIN basis. If a firm had more than one EIN, we treated each of its EINs as a separate sampling unit. To be eligible for the initial sampling, an EIN had to have nonzero payroll in 2009. The EINs were stratified according to their major industry and their estimated sales (on a 2007 basis). Within each noncertainty stratum, a simple random sample of EINs was selected without replacement.

Sample Maintenance: We update the sample to represent EINs issued since the initial sample selection. These new EINs, called births, are EINs, recently assigned by the IRS, that have an active payroll filing requirement on the IRS Business Master File (BMF). An active payroll filing requirement indicates that the EIN is required to file payroll for the next quarterly period. The Social Security Administration attempts to assign industry classification to each new EIN.

The Census Bureau considers EINs with an active payroll filing requirement on the IRS BMF to be "BMF active" and EINs with an inactive payroll filing requirement to be "BMF inactive."

We sample EIN births on a quarterly basis using a two-phase selection procedure [OMB No. 0607-0189]. To be eligible for selection, a birth must either have no industry classification or be classified in an industry within the scope of the Service Annual Survey, the Annual Wholesale Trade Survey, or the Annual Retail Trade Survey, and it must meet certain criteria regarding its quarterly payroll. In the first phase, we stratify births by broad industry groups and a measure of size based on quarterly payroll. A relatively large sample is

selected and canvassed to obtain a more reliable measure of size, consisting of receipts in two recent months and a new or more detailed industry classification code. Births that have not returned their questionnaire after 30 days are contacted by telephone.

Using this more reliable information, in the second phase we subject the selected births from the first phase to probability proportional-to-size sampling with overall probabilities equivalent to those used in selecting the initial MRTS sample from the December 2010 Business Register. 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 sample approximately nine months after they begin operation.

If a firm was selected with certainty and had more than one establishment at the time of sampling, any new establishments that the firm acquires, even if under new or different EINs, are included in the sample with certainty.

However, if a firm was selected with certainty and had only one establishment at the time of sampling, only future establishments associated with that firm's originally-selected EIN are included in the sample with certainty; any new EINs that might later be associated with that firm are subjected to sampling through the quarterly birth-selection procedure.

To be eligible for the sample canvass and tabulation, an EIN selected in the noncertainty sampling operations must meet both of the following requirements:

- It must have an active payroll filing requirement on the IRS Business Master File.
- It must have been selected from the Business Register in either the initial sampling or during the quarterly birth-selection procedure.

Each quarter, we check against the current Business Register to determine if any EINs on the survey have become BMF inactive. Typically, we do not canvass BMF inactive EINs during the reference month. Likewise, if any EIN on the survey was BMF inactive in a previous reference month is now BMF active on the current Business Register, we again include these EINs in the canvass.

Single-unit EINs selected into the sample with certainty are not dropped from canvass and tabulation if they are no longer BMF active. Rather, the firm that used the EIN is contacted, and if a successor EIN is found, it is added to the survey. For both inactive and any previously inactive EINs that are now active, data are tabulated for only the portion of the reference year that these EINs reported payroll to the IRS.

Because births are not represented in the monthly survey until they go through the two-phase selection procedure, an interim procedure is used to account for births during the period of time between the onset of activity and the time of birth selection. This interim procedure consists of imputing data for all EINs currently in the monthly survey that go out of business but are still on the IRS BMF.

Births are added to the monthly survey in February, May, August, and November of each year. At the same time, inactive EINs are removed from the survey. To minimize the effect of births and inactive EINs on the month-to-month change estimates, we phase-in these changes by incrementally increasing the sampling weights of the births and decreasing the sampling weights of the inactive EINs in a similar fashion. In the first month, we tabulate the births at one-third their sampling weight and tabulate the inactive EINs at two-thirds their sampling weight. In the second month, we tabulate the births at two-thirds their sampling weight and tabulate the inactive EINs at one-third their sampling weight. In the third month, we tabulate the births at their full sampling weight and the inactive EINs are dropped (sampling weight equal zero).

EINs that were BMF inactive in a previous reference quarter but are identified as BMF active for the current reference quarter are treated as births for this procedure.

Estimation procedures: Estimates of monthly sales and end-of-month inventories as well as quarterly e-commerce sales are derived from data collected in the MRTS. Each month, firms in the MRTS sample are asked to report their sales, e-commerce sales, and end-of-month inventory data for the month just ending. Monthly 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 below. The weight for a given sampling unit is the reciprocal of its probability of selection into the MRTS sample. Quarterly totals are computed similarly. The monthly totals are then benchmarked to the latest totals from the Annual Retail Trade Survey (ARTS). Period-to-period (e.g., month-to-month) change estimates are computed using the benchmarked monthly totals.

Monthly total estimates for broad industry groups (e.g., 2-, 3-, and 4-digit NAICS levels) are computed by summing the benchmarked monthly totals for the appropriate detailed industries comprising the broader industry group. Variances are estimated using the method of random groups.

Seasonal adjustment: Sales and end-of-month inventory estimates are adjusted for seasonal using Census Bureau's X-13-ARIMA (AutoRegressive Integrated Moving Average)-SEATS (Signal Extraction in ARIMA Time Series) program.

Sales estimates are also adjusted for trading day effects and holiday effects if appropriate. Seasonal adjustment models are reviewed on an annual basis.

2. **Procedures for Collecting Information**

The sample is a probability sample selected from retail and food services employers (NAICS sectors 44, 45 and 722), contained in the Census Bureau's Business Register, which covers all employers who make social security payments for their employees under the FICA.

There are approximately 12,000 retail firms included in the survey. Of this number, about 2,500 are large firms and were selected with certainty (100 percent chance of selection). The remaining 9,500 respondents are small and medium sized firms and were selected with noncertainty.

Data for the MRTS are obtained at the 6-digit NAICS level with all intermediate and summary tables obtained by summation. Tabulations will include estimates on sales, inventories, and inventories/sales ratios. Data for the MRTS are published for four-digit and selected five-digit NAICS levels and total summary levels.

Statistical analysis of the monthly data will be based on comparison of the monthly data to:

- (1) annual survey estimates;
- (2) prior year monthly and annual survey results;
- (3) the results of the most recent Economic Census; and
- (4) published trade, business, and media reports.

Comparisons of the monthly estimates to current and prior year annual and monthly estimates are produced by the use of data edits that identify firms exceeding predetermined tolerance cutoffs. The tolerance cutoffs specify acceptable dollar level and percent differences between the annual data, the previous annual estimates, and monthly wholesale data. Data analysis also includes research of inventory-to-sales ratios. Also, an analysis is made at the detailed NAICS level to determine if data reported for each subsector appear acceptable.

In terms of dollar volume, these estimates have a high BEA priority because of their timeliness. The last six month average response (in terms of dollar volume) to this voluntary survey was about 71 percent for sales and 69 percent for inventories. The 2013 average response (in terms of units) to this voluntary survey was about 59 percent.

3. **Methods to Maximize Response**

The National Processing Center in Jeffersonville, Indiana, performs a fax reminder and/or telephone follow-up for all firms that have not responded by a certain date. The telephone follow-up is also used if firms have not completely filled out the form or

have reported questionable data that may be unacceptable for the retail sales, inventory, and e-commerce estimates. Firms that refuse to respond to the survey are called to convey the importance of their participation.

A fax machine connected to an "800" telephone line permits fax reporting to our collection facility on a 24-hour basis. The Census Bureau also has an "800" toll-free telephone number in both Washington, D.C. and Jeffersonville, Indiana, to permit respondents to call in data or ask questions without extra expense. A Frequently Asked Questions section on our website also provides respondents a simple way to obtain answers to their questions. Respondents can also report online through the "Centurion" system, which allows respondents to report 24 hours a day, 7 days a week, at their convenience.

The Census Bureau accepts data prepared on a company's own form, thereby relieving the respondent of the burden of posting data to a report form. Carefully prepared estimates are accepted.

Additionally, we work with our data collection staff to identify strategies for maximizing response rates and improving the data collection process that will reduce response burden, improve data quality, and collect data in a more company centric manner. We also visit companies that are having a large effect on the survey that are not reporting or may be reporting inconsistently or providing data in a format that is difficult to use.

Further, we made a significant effort to contact cases that refused to participate in the survey prior to September 2011. Approximately 196 cases were reactivated and mailed at the end of September 2012. We received responses for approximately 20% of the cases that we reactivated as part of this initiative.

We also introduced electronic reporting in September 2012, through the use of Centurion, which we also discuss in response to question 3 in Supporting statement A. The instrument has two open data periods where respondents can provide current and any missing prior month data (mailed and faxed forms only allow the respondent to provide one month of data per form). Prior to the implementation of Centurion, we received approximately 75% of responses via Fax and 25% via mail. Currently, the response is approximately 58% Internet, 29% fax, and 13% mail. Every quarter we also send out a Flyer promoting our electronic reporting to respondents.

We also have strived to emphasize the value of the data that we collect, by connecting those responsible for reporting at large retailers with their colleagues within their own company who rely on Census Bureau data. By implementing this strategy, we were able to receive data from a large respondent.

We are also drafting letters to encourage response that will be sent to large non-respondents from the Secretary of Commerce to the chief executives of those firms.

Two letters will be sent out to these large non-respondents, one is for companies who have stopped reporting and the other is for companies who have never responded.

4. **Testing of Procedures**

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. Budget permitting, we plan to conduct future content evaluation surveys to measure nonsampling error and ways to further reduce reporting burden.

5. **Contacts for Statistical Aspects and Data Collection**

Planning and implementation of this survey are under the direction of Ian Thomas, Chief of the Retail Indicators Branch, Census Bureau, (301) 763-7122.

Questions concerning methodology should be directed to Deanna Weidenhamer, Chief of the Program Research and Development Branch at (301) 763-7186.

Attachments

1. Copy of Form SM-44(12)S-A
2. Copy of Form SM-44(12)SE-A
3. Copy of Form SM-44(12)SS-A
4. Copy of Form SM-44(12)B-A
5. Copy of Form SM-44(12)BE-A
6. Copy of Form SM-44(12)BS-A
7. Copy of Form SM-45(12)S-A
8. Copy of Form SM-45(12)SE-A
9. Copy of Form SM-45(12)SS-A
10. Copy of Form SM-45(12)B-A
11. Copy of Form SM-45(12)BE-A
12. Copy of Form SM-45(12)BS-A
13. Copy of Form SM-72(12)S-A
14. Copy of Form SM-20(12)I-A
15. Copy of MRTS cover letter 1
16. Copy of MRTS cover letter 2
17. Copy of MRTS cover letter 3
18. Copy of Internet reporting instructions
19. Copy of BEA letter responsive to Federal Register Notice