

SUPPORTING STATEMENT- PART B
U.S. Department of Commerce
U.S. Census Bureau
OMB Control Number 0607-0104
Advance Monthly Retail Trade Survey (MARTS)

Part B. Collection of Information Employing Statistical Methods

1. Universe and Respondent Selection

The Advance Monthly Retail Trade Survey (MARTS) is a subsample of approximately 4,900 units (companies and EINs) selected from the larger Monthly Retail Trade Survey (MRTS) sample of about 12,000 units.

The MARTS units are stratified by broader industry categories and substratified by annual sales size. There are 36 primary strata defined by industry. Within each industry stratum we stratify the sampling units into 4, 7, 10, or 13 substrata by a measure of size related to their annual sales. 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 1 and a sampling weight of 1). 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 and boundaries of noncertainty substrata for each industry group.

Sample sizes are calculated to meet hypothetical reliability constraints on estimated annual sales totals for specified industries. Sample selection is done independently within each size stratum using a systematic probability-proportional-to-size procedure where the size used is the MRTS sampling weight. Sampling weights range from 1 to 1,000.

Every two and one-half to three years, the sample is re-selected. New businesses are not added during the life of the sample. Therefore, as firms go out of business, refuse to respond, etc., the sample deteriorates and becomes less representative. By re-selecting the sample, it better represents current business conditions and many small and medium-size firms are relieved of the reporting burden. We are currently in the process of selecting a new MARTS sample, to be introduced in Fall 2015. The last MARTS sample was introduced in Spring 2012.

Advance sales estimates for the most detailed industries are computed using a link-relative estimator. For each detailed industry, we compute a ratio of current-to-previous month weighted sales using data from units for which we have obtained usable responses for both the current and previous month. Then, for

each detailed industry, the advance total sales estimate for the current month is computed by multiplying this ratio by the preliminary sales estimate for the previous month (derived from the larger MRTS) at the appropriate industry level. Total estimates for broader industries are computed as the sum of the detailed industry estimates.

The preliminary sales estimate used in this computation includes data for nonemployers (i.e., businesses without paid employees). Therefore, nonemployers are represented in the published MARTS estimates. The link-relative estimate is used because there is no sampling-unit level imputation or adjustment for nonrespondents in MARTS.

Variances are estimated using the method of random groups and are used to determine if measured changes are statistically significant.

Estimates are indirectly benchmarked to the Annual Retail Trade Survey (ARTS) estimates via the link-relative estimation method.

Estimates are adjusted for seasonal variation and holiday and trading-day differences using the X-11 filter-based adjustment procedure available in the Census Bureau's X-13ARIMA-SEATS program.

Seasonal adjustment of estimates is an approximation based on current and past experiences. Therefore, the adjustment could become less precise because of changes in economic conditions and other elements that introduce significant changes in seasonal, trading-day, or holiday patterns.

2. Procedures for Collecting Information

Data are collected by Internet (Centurion), facsimile, telephone or mail from approximately 4,900 employer firms. On a monthly basis, questionnaires are mailed to respondents five working days before the end of the reference month. For respondents who have a fax number listed, a questionnaire is sent via fax to them on the last workday of the reference month (other than Fridays).

The sales estimates are collected by the National Processing Center in Jeffersonville, Indiana by the end of the seventh working day following the reference month. The data are tabulated, edited, analyzed, and reviewed on the seventh, eighth, and sometimes ninth working days.

The following table provides response rates for the second month of each of the last 4 quarters. Dollar volume response represents the percent of total sales accounted for by response data.

| <u>Data Month</u> | <u>Dollar Volume</u> <u>(% of Total Sales)</u> |
|-------------------|---|
| November '14 | 57.5% |
| August '14 | 56.8% |
| May '14 | 56.2% |
| Feb '14 | 57.0% |

3. **Methods to Maximize Response**

As a follow-up to the 2012 OMB renewal, here is an update on the steps we indicated we would take to maximize response:

- Centurion Internet reporting was introduced in August 2012 and MARTS response via the Internet has steadily increased over time. Respondents are encouraged to submit electronic responses via the Internet by using Census' Centurion software. Responding via the Internet provides companies with a convenient reporting method and reduces respondent burden.

| Statp | Survey | Check-In (%) by Type of Receipt | | | | |
|--------------|---------------|--|-----------------|------------------|----------------|----------------|
| | | Mail | Internet | Fax/Clerk | Analyst | Total % |
| 201208 | MARTS | 5.0 | 0.0 | 92.0 | 3.0 | 100.0 |
| 201212 | MARTS | 1.7 | 34.3 | 62.2 | 1.9 | 100.0 |
| 201408 | MARTS | 3.9 | 65.3 | 28.5 | 2.3 | 100.0 |
| 201412 | MARTS | 1.6 | 65.8 | 30.4 | 2.2 | 100.0 |

- A list of firms having a high effect on the published estimates that were also refusing to report data was compiled and discussed with senior department executives. We consulted with the Secretary of Commerce, Penny Pritzker to elicit her support in contacting Chief Executive Officers (CEO) of large nonresponse firms. In addition, we continue to consult with the Associate Director for Economic Programs, Mr. William G. Bostic, Jr. We expect some firms to begin or resume reporting in response to this effort. We plan to continue seeking the support of senior department executives to minimize non-response from firms of particular importance that are not currently reporting.
- A new MARTS sample was introduced in Spring 2013 as planned which redistributed the burden on small and medium sized firms.
- Prior to the introduction of the latest sample, we targeted efforts to larger non-responding companies in the Fall of 2012 to try to persuade them to

cooperate. As part of this effort, we targeted 119 companies and 48 companies (40%) were successfully converted.

- The Census Bureau is in the early stages of leveraging tools and concepts used in the collection of the mandatory annual and Economic Census programs to aid in the collection of data from voluntary surveys. Our efforts have include coordinating across programs the outreach to both large and small companies, establishing a single point of contact on both the company and government sides to facilitate simpler reporting, and assisting in discussions where companies are uncooperative. Moving forward, the voluntary surveys plan to address a subset of refusal companies to determine what strategies may work best to better influence company cooperation. As of July 2015, the potential companies have been identified and initial strategies are being developed.
- Starting in April 2015, the Census Bureau is hosting a webinar series to explain the importance of the economic indicator surveys. Part of this series will be directed at the data respondents and the value in their participation in our surveys.

In addition to those efforts, we continue to conduct additional steps to try to maximize response:

- A 24-hour facsimile machine connected to a toll free telephone line permits respondents to fax data to our collection facility in Jeffersonville, Indiana. This process expedites the receipt of questionnaires, thus decreasing the number of telephone follow-up inquiries.
- The U.S. Census Bureau also provides a toll free telephone number for respondents to call in data or ask questions. The National Processing Center in Jeffersonville, Indiana performs telephone follow-up for all firms that have not responded by the due date, as well as those firms that have reported incomplete or questionable data.
- Special telephone follow-up is conducted each month for a limited number of respondents to get an extra week of sales data from companies that were excluded from the totals because the sales ending dates were unacceptable. Unacceptable ending dates are those that fall too early or too late in the month and, therefore, do not represent the calendar month being collected.
- Firms that refuse to respond to the survey are called in an attempt to convey to them the importance of the survey. This method fosters bilateral communication regarding potential obstacles to timely response, and develops relationships between analysts and company management.

Nonresponse Bias Study

In 2012, the Census Bureau's Office of Statistical Methods and Research for Economic Programs completed a Nonresponse Bias Analysis for MARTS (reference Attachment G). As part of the study, MARTS response rates were analyzed from August through October 2010. At the time of the study, MARTS had just been migrated to a new processing system, and only three months of data were available. Because the MARTS link relative estimator relies on the estimates from its parent survey, the MRTS, the study also reviewed the MRTS response rates in 2009.

During the 2012 Business Sample Revision (BSR), we selected new samples for both MRTS and MARTS. MARTS is a subsample of MRTS. We select new samples during the BSR about every 5 to 6 years. We also reselect a new MARTS subsample approximately half-way between the BSR cycles to reflect the latest MRTS updates (e.g., company births) and redistribute the earlier reporting burden of MARTS. We first published data from these new samples in May 2013, which comprised the April 2013 MARTS and preliminary March MRTS estimates. A new MARTS subsample will be selected in the Fall 2015.

As requested, a nonresponse bias analysis is currently being planned based on the initial months of the new sample. As the 1st step in this process, we have been tracking the MARTS Unit Response Rates and Dollar Volume Response Rates, as well as the MRTS Unit Response Rates and Total Quantity Response Rates during the new samples.

One of the findings from the 2012 MARTS Nonresponse Bias Study was a concern over the treatment of the nonresponding small and medium size firms. Based on the research performed, the small and medium size firms (noncertainties) continue to lag in terms of response. As we continue to try to improve their participation, we are also taking steps to evaluate the values we use as replacement for those nonrespondents. Namely, we have implemented methods by which we can reset the imputed levels of companies based on information received on the mandatory annual surveys.

4. Testing of Procedures

The results of the methods for developing retail sales estimates are regularly verifiable when benchmark data become available from the Annual Retail Trade Survey and the Economic Census. We recently completed an evaluation of the MARTS survey as required by the Statistical Policy Directive on Compilation, Release, and Evaluation of Principal Federal Economic Indicators. This evaluation was submitted to the OMB in July 2013.

5. Contacts for Statistical Aspect of Data Collection

Questions regarding the sample design and statistical methodology used for this survey should be directed to Xijian Liu, Assistant Division Chief of Methodology for Retail, Wholesale, and Services Programs, Economic Statistical Methods Division, (301) 763-4272. Planning and implementation of this survey are under the direction of Karla Allen, Section Chief, Retail Indicators Branch, (301) 763-7208.

Attachments:

A: MARTS Press Release, December 2014

B: Forms SM-4412A, SM-4412AE, SM-4412AS, SM-7212A, and Centurion Online

C: Letter MARTS-ADD

D: Compilation of News Articles on MARTS, December 2014

E: Centurion Online Cover letter

F: Letter of Support received from Bureau of Economic Analysis

G: 2012 MARTS Nonresponse Bias Analysis Study