

Department of Commerce  
U.S. Census Bureau  
OMB Information Collection Request  
Quarterly Survey of Plant Capacity Utilization  
(OMB Control No. 0607-0175)

A. Collection of Information Employing Statistical Methods

1. Universe and Respondent Selection

The current sample for the Quarterly Survey of Plant Capacity Utilization was implemented starting with the first quarter of survey year 2015. The sample frame for the new sample was based on the Census Bureau's 2013 Business Register with updated information from the 2012 Economic Census on a 2012 North American Industry Classification System (NAICS) basis. This sample frame contained records for approximately 190,000 manufacturing establishments and 10,000 publishing establishments.

Sampling probabilities for the quarterly survey are assigned proportionate to total annual value of shipments (measure of size), except for self-representing establishments that are determined based on relative contributions to their respective industries. Sample allocation is determined by the priority industry requirements specified by the FRB, which includes 94 industry groups that are used as publication levels and are comprised predominantly of 4-digit NAICS industries or combinations of NAICS industries. Each of these 94 industry groups is sampled independently to satisfy the total sample size constraint of approximately 7,500 establishments. The sampling procedure ensures that the allocated sample size for each industry group is exactly realized. Due to insufficient response, NAICS industries 31511 and 31519, formerly published separately, are now aggregated and published together, effective 3rd-quarter 2015. Therefore, we sample 94 industry groups, but only publish 93 industry groups.

Until the next new sample is implemented, the current sample is supplemented each year with a sample of newly identified establishments from the Business Register in order to accurately reflect the universe for a given survey year and to maintain the initial sample size by offsetting the effects of sample attrition in each intervening survey year. The next new sample will be selected when the results of the 2017 Economic Census are available. Previously, before publishing estimates from the new sample, we processed both the new sample and the old sample concurrently for two quarters and compared the estimates. This allowed us to identify data errors for the new sample and explain differences due to sample composition and response.

## 2. Procedures for Collecting Information

Both full production utilization rates and national emergency production utilization rates are published from the quarterly survey. The full production utilization rate for each industry group is estimated based upon those plants reporting both actual value of production and full value of production. Simple weighted estimates of these two variables are computed by applying each plant's sampling weight to its respective data values and summing these weighted values across all reporting plants in the given industry group. The full production utilization rate for each given industry group is then calculated as the ratio of total weighted actual production to total weighted full production. A similar procedure is used to estimate the national emergency production utilization rates, using weighted values that are reported for the actual value of production and the national emergency production estimate.

The average plant hours per week in operation for each industry group are estimated based on those plants in the industry reporting plant hours. Simple weighted estimates of the plant hours are formed by applying the plant's sample weight to its respective values and adding these weighted values across the reporting plants. The average is formed as the ratio of the plant hours weighted sum to the sum of the weights for the reporting plants.

Comparisons between actual and full production by industry are made using various checkbox information that is collected in the survey. This information is collected to determine the primary reasons for changes in full production capability between current quarter and previous quarter, as well as the primary reasons for actual production being less than full production capability for the current quarter. Beginning with 1st-quarter 2013, these data are summarized in the form of weighted proportions for each of the checkbox data items at the 3-digit NAICS level, and historical estimates as far back as 1st-quarter 2008 are available upon request. Each proportion is formed from the QPC sample as the ratio of the weighted number of plants checking the particular checkbox data item to the weighted number of plants checking at least one of the checkbox data items for that particular question.

The unweighted unit response rate is approximately 50-55% at the overall survey level. A non-response bias study was performed based on the request by OMB during the last OMB approval process. The results of this study are in Appendix C.

### 3. Methods to Maximize Response

#### a. Follow-up Procedures

Since the last OMB clearance we have added a few new processes in order to improve our response rates. We added an email reminder that is sent to remind respondents of QPC's due date and also added a follow-up email to encourage respondents to submit their data. The follow-up email is sent after the paper follow-up. We have also improved our telephone follow-up procedures so that we are spending our resources on calls that have a high chance of reporting data and on cases that will have the greatest impact of increasing our response rate. We try to contact as many respondents as possible. Unfortunately, due to budget constraints from our sponsors and to a low amount of resources, there is only so much that we can do. Respondents are asked to submit their data within 20 days. A due date reminder email is sent to delinquent respondents around 15 days after mail-out to remind them of the surveys due date. Those who do not respond to the survey receive a follow-up letter. A couple weeks later we send a follow-up email. Please see Supporting Statement Part A, Section 16 for a more detailed outline of the follow-up procedures.

Analysts telephone delinquent respondents beginning with plants that have the greatest impact on the overall response rate. They are asked to provide data via the internet or over the telephone.

#### b. Estimating for Missing Data

Given that we produce rates, we do not estimate data for plants not responding in time to meet publication deadlines because the imputation would merely involve ratios of weighted sums from respondents at the industry group level.

#### c. Reliability

For each industry group level, standard errors are published for the full production utilization rates, the national emergency production utilization rates, the average plant hours per week, and the checkbox proportions.

### 4. Tests of Procedures or Methods

Periodically, Census Bureau staff interview survey respondents to assess our data requests and to keep abreast of the current record keeping practices. For the quarterly survey, this includes inquiring about the frequency of the quarterly

collection, response time, electronic reporting, and policy pertaining to voluntary surveys.

5. Contacts for Statistical Aspects and Data Collection

Person responsible for statistical methodology:

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Person responsible for data collection:

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List Of Appendices

Appendix A. QPC worksheet, instructions, and screenshots from the online application.

Appendix B. Copy of cover letter, follow-up letter, reminder email, and follow-up email

Appendix C. Nonresponse bias study findings