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Supporting Statement B for the
Federal Reserve Payments Study
(FR 3066a and FR 3066b; OMB No. 7100-0351)

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Summary

For all information collections that involve surveys or require a statistical methodology, the Board of Governors of the Federal Reserve System (Board) is required to provide a complete justification and explanation of the use of such a methodology. For collections that employ surveys without such a methodology, the Board should be prepared to justify its decision not to use statistical methods in any case where such methods might reduce burden or improve accuracy of results.

Background

The FR 3066a and FR 3066b are voluntary annual surveys, consisting of a triennial component to be conducted in 2019, and shorter annual surveys administered to a smaller number of participants to be conducted in 2020 and 2021. These surveys collect information to support the Federal Reserve System's (FRS) role in the retail payments system.[1] These surveys are the latest iteration in a series of surveys of depository institutions, payment networks, processors, and issuers, collectively called the Federal Reserve Payments Study (FRPS) that were conducted at 3-year intervals from 2001 to 2016. The 2016 study collected information for the 2015 calendar year, called the "survey reference period." Annual supplements began in 2017 to collect information for 2016, and continued in 2018 to collect information for 2017.[2]

Depository and Financial Institutions Payments Survey (FR 3066a)

The Federal Reserve constructs the population frame of depository and financial institutions (including credit card banks, commercial banks, savings institutions, and credit unions) at the level of the highest holder contained within reports filed with the Federal Reserve. These institutions include those that offer demand deposits accounts, prepaid card program accounts, and credit card accounts to consumer, business, and government customers, or serve as ATM sponsors for independent service operator (ISO) customers.

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[1] The Federal Reserve plays a vital role in the U.S. payments system, fostering its safety and efficiency, and providing a variety of financial services to depository institutions. The Federal Reserve is involved with both retail and wholesale payments. Retail payments are generally for relatively small dollar amounts and often involve a depository institution's retail clients—individuals, businesses, and governments. The Reserve Banks' retail services include distributing currency and coin, collecting checks, and electronically transferring funds through the automated clearinghouse system. By contrast, wholesale payments are generally for large dollar amounts, and often involve a depository institution's large corporate customers or counterparties, including other financial institutions.

[2] The study would be designed to be compatible with and a continuation of past triennial surveys on the payments system conducted in 2001, 2004, 2007, 2010, 2013, and 2016. The timing of future surveys would follow the same pattern as in past surveys; the reference period for the FR 3066a and the reference period for the FR 3066b would be January through December 2018. Data from both surveys would be used to create aggregate estimates for 2018. Annual supplements would report a limited set of similar information for 2019 and 2020. Reports on past surveys are available at https://www.federalreserve.gov/paymentsystems/fr-payments-study.htm.

A sample of 3,800 institutions is drawn from this population frame. The sample consists of both a certainty group of the largest institutions (including any institutions that are known to play a unique role in payments processing or issuance) and a set of separate random samples of institutions from the remaining population of institutions, stratified by type and size. A contractor would recruit respondents, including follow-up contacts by letter (e-mail and post) and telephone, and administer the surveys using an internet webpage format. An Excel workbook and pdf are also provided, and though rarely, a respondent may use these alternatives to provide data if desired.

The sample size of 3,800 institutions is the same as the sample size in the previous triennial (2016) version of the survey. Sample stratification and selection methods follow classical and innovative techniques based on classical methods as well as the state of the art of the literature on business survey methods. As in 2016, the 2019 triennial version of the survey is administered using a complex planned-missing-data design with 11 questionnaire versions allowing shorter questionnaires for smaller institutions.[3] The allocation of institutions to size strata has been updated for 2019 due to lessons learned from analysis of the 2016 survey outcomes. To account for the increased concentration of the financial industry and to improve the expected precision of total estimates, the size of the certainty group of the largest institutions is 1,750 for 2019 compared with 439 for 2016.[4] The remaining 2,050 institutions were selected at random with probabilities declining with size.

As in 2016, 11 questionnaire versions would be administered to allow individual institutions of smaller sizes to fill out shorter questionnaires. The longest questionnaire (version 1) would be administered to 1150 of the largest institutions and contains 410 quantitative items, mostly laid out in the form of questions about roughly 200 number-value pairs. The surveys distributed to the remainder of the sampled institutions via questionnaire versions 2-11 contain a maximum of 350 item and a minimum of 141 items, with a mean of 271 items. Compared with 2016, the number of items questionnaire version 1 is reduced by 26 percent, and the average number of items in the shorter questionnaires is reduced 41 percent. These reductions may be perceived as substantial reductions in potential burden, which is expected to favorably affect the total number of responses. The Federal Reserve expects to receive at least 1,384 responses (the number received in 2016) for the 2019 survey and at least 67 respondents for each of the annual supplements in 2020 and 2021 (the number of responses received in 2018, the most recent annual supplement).

The survey will collect data for each calendar year. This approach eliminates seasonality concerns and provides comparability with the other surveys which will also collect data for the calendar year.

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[3] Analysis of the outcome of the 2016 planned missing data survey design compared with the 2013 full survey design is discussed in Geoffrey Gerdes and Xuemei (May) Liu, "Improving Response Quality with Planned Missing Data: An Application to a Survey of Banks" in *The Econometrics of Complex Survey Data: Theory and Applications*, Advances in Econometrics, Volume 39, 2019, pp 237-58.

[4] This substantial increase in the certainty sample size is primarily the result of the lifting of an arbitrary restriction on the number of institutions sampled with certainty that was imposed on the optimization routines used to allocate the sample in 2016 and previous years. The change is expected to improve the precision of total estimates for a given sample size. The change is likely to reduce the amount of information received from smaller institutions, but the reduction should have a relatively minor affect on study goals.

In light of the increased sample size from 2013 to 2016, response rates declined. However, the total number of responses increased from 1,182 to 1,384. The estimation method relies on a maximum likelihood imputation technique which addresses missing data bias by taking advantage of high correlation and logical relationships between survey variables as well as auxiliary population variables. In addition, ratio estimation techniques using population auxiliary variables are used to address nonresponse bias and achieve high precision due to high correlations. Past FRPS estimates yielded reasonably precise figures even for items with low response rates.[5] Bias or other problems related to nonresponse in past surveys were not found to be significant because of the use of these methods.

As noted above, the survey design results in the deliberate exclusion of some questions. The sampling and questionnaire assignment method uses randomization techniques to ensure balance in the representation of data across all sizes and types of institutions. Analysis, imputation, and estimation methods are adapted to account for this revised survey design and, indeed, are ideal for a setting in which the randomness of missing items is predetermined by the researcher.

Networks, Processors, and Issuers Payments Surveys (FR 3066b)

With the exception of the transit survey form, the FR 3066b is designed as a census. The Federal Reserve would work with a contractor to identify the final list of networks, processors, and issuers from which to collect data. Estimation of national aggregate payment volumes from the survey is based on developing a complete population frame of all relevant organizations (approximately 180 organizations, and counted as 125 in the burden estimates for 2018, and 60 respondents for each of the annual supplements) and requesting data from each. There are 17 different surveys, and respondents only provide information in the survey forms applicable to their organizations. For the 16 non-transit surveys, the survey response population is not large enough to employ formal statistical methods to useful effect. In cases where a response is not returned, the missing items would need to be imputed using publically available information and analysis of data from similar organizations that did provide data. In such cases, expertise and heuristic methods are employed to estimate the missing data. Totals are constructed by summing the reported and estimated data. The 2016 triennial survey had a response rate of 86 percent for non-transit surveys. The less-extensive annual supplements had similar response rates.

The survey of local transit operators, which will be conducted in 2019 but not in 2020 or 2021 is based on a population of transit operators with revenue published by the US Department of Transportation. Using the published information and other information collected for the 2016 triennial study, a frame from which to draw a representative sample is created. The sample consists of a census of the top 150 agencies in terms of revenue. In addition, a representative sample of 163 of the remaining agencies is drawn through systematic random sampling based on revenue. Ratio estimation methods will be used for the analysis of the collected data. A similar sample was used in 2016, which had a response rate of approximately 40 percent.

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[5] In part, this is because of a logical hierarchy built into the survey instrument that bounds the possible values of missing items when related items have been reported. Estimated standard errors that take into account of the uncertainty in the imputation method are used to assess the reliability of such estimates.