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Issues in Changing the Measurement Methodology for the Quarterly Tax Survey

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Abstract

The U.S. Census Bureau has collected tax information from local governments on a quarterly basis since 1962. Based on the Committee on National Statistics' review of the U.S. Census Bureau's state and local government statistics program, the Quarterly Survey of Non-Property Taxes' instrument and sample design are changing. This paper will provide background about the measurement of local government non-property taxes over time, and then examine the effects of (proposed) changes. These changes include a discussion of two main themes that data collection from governments has in common with other establishment surveys, including the collection of data from one target population versus another and issues with multiple respondents, record retrieval and terminology. Implications for sample size, instrument design, and data collection costs are also discussed.

1. Introduction

In 2007, the National Research Council (NRC) concluded a comprehensive assessment of the U.S. Census Bureau's Governments Division's surveys on the economic activity of state and local governments. Through its Committee on National Statistics (CNSTAT), the NRC issued a report entitled *State and Local Government Statistics at a Crossroads*, in which 21 recommendations on data quality and statistical methods, dissemination and analysis, as well as challenges for the future were published. In this report, the Quarterly Survey of State and Local Government Tax Revenue, which provides national estimates of state and local tax revenue and detailed state government tax revenue data by state, received a recommendation to use its upcoming redesign to evaluate the quality of the sample frame and to develop a probability sample of local governments for non-property tax measurement. (The current local non-property tax portion of the Quarterly Tax Survey has been a non-probability panel since 1992.) In addition to these changes, the Governments Division decided to update and expand the questionnaire to give a more accurate and complete picture of non-property tax.

For the purposes of this paper we will only focus on one of the three component questionnaires (local property tax, local non-property taxes, and state

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government-imposed taxes) of the Quarterly Tax Survey, the Quarterly Survey of Non-property Taxes. In this paper we will provide background about the measurement of local government non-property taxes over time, and then examine the effects of (proposed) changes. These changes include a discussion of two main themes: 1) issues with multiple respondents, record retrieval, and terminology that were revealed during cognitive testing, and 2) collecting data from one target population (tax imposers) versus another (tax collectors). Both have implications for sample size, instrument design, and data collection costs.

2. Background

Surveying governments is similar to surveying other types of establishments and organizations. There are several differences between surveying establishments and households, which are outlined below:

- The data collected in establishment surveys tends to be factual, quantitative, and continuous in nature – financial information, employment figures, etc. – rather than opinions, attitudes, or data on personal behaviors (Cox & Chinnappa, 1995).
- Establishment surveys often measure technical concepts with precise definitions, and records do not always easily match with response categories (Cox and Chinnappa 1995; Willimack, et al. 2004).
- Data requested in establishment surveys may require multiple sources (Groves, et al. 1997).
- In some cases, it may be necessary to get authorization to release data outside the establishment (Groves, et al. 1997; Willimack, et al. 2004).
- Most establishment surveys are self-administered, in order to encourage the use of records (Willimack, et al. 2004).
- Populations tend to be skewed – small numbers of very large enterprises can account for a substantial portion of their sector of the economy (Cox and Chinnappa 1995; Riviere 2002; Willimack, et al. 2004).

It should be noted that the Census Bureau's surveys of governments differ from its surveys of establishments in one important respect. As authorized in Title 13, U.S.C, surveys of state and local governments conducted by the Census Bureau, including the Quarterly Tax Survey, are not mandatory. Data on state and local governments is generally speaking a matter of public record.

The Quarterly Tax Survey program consists of three separate questionnaires – one that collects data on state tax revenue, one that collects data on local property taxes, and one that collects data on local non-property taxes. The Quarterly Survey of Non-property Taxes provides estimates of local non-property government tax revenues. Data for this survey are collected from local governments ranging from small towns and municipalities to large cities and

counties². This survey also includes special districts (e.g., sewer and water districts) and school districts. In its current form the survey is a non-probability panel consisting of 111 local governments that have significant non-property tax collection yields. However, to meet the Census Bureau's and the Office of Management and Budget's statistical standards and to address the recommendations set forth by CNSTAT this survey is moving to a probability sample drawn from the 2007 Census of Governments. In addition to selecting a new sample, the questionnaire is being expanded from asking for data on three tax categories (general sales tax, individual income tax and all other taxes) to collecting information on an additional eight tax and license categories. Currently these additional items are estimated based on annual data collected from large local governments. By including these remaining taxes and licenses as a direct quarterly collection, the Census Bureau will be able to construct better national estimates.

Expanding the form to include taxes and license fees - such as motor fuels sales taxes, alcohol and tobacco sales taxes, motor vehicles licenses, and business licenses - has required Census Bureau staff to examine how these taxes and licenses are imposed and collected at the local level, the language local governments use to describe these revenues, and how quickly after the close of each quarter these data are available for reporting. To obtain this information, staff employed cognitive interviewing.

3. Methods

Prior to implementing changes to the Quarterly Tax Survey, the Census Bureau conducted two rounds of cognitive interviews³. The first round, conducted in the latter half of 2008, consisted of 26 interviews in three metropolitan areas of the United States. These interviews were focused on data availability, especially in cases where governments may collect taxes on behalf of another government, comprehension of terminology, and timeliness. The second round of cognitive interviews, which had similar research questions and took place in the first half of 2009, consisted of 30 interviews with respondents in three metropolitan areas of the U.S. Governments were selected based on their willingness to participate. For each round of interviews a list of all local governments in each metropolitan area was compiled. These governments were then called and asked to participate in the interviews.

In each round, the typical respondent was an employee of a county, town, village, city, or borough government. Though virtually all employees had an accounting

² County, municipal, and township governments are referred to as "general purpose" local governments in Census Bureau statistics on governments. Special district and school district governments are referred to as special purpose governments.

³ Cognitive testing is a qualitative research methodology. It is inappropriate to make statistical inferences to a target population based on results of this method.

background, their titles varied. Participants included town managers, treasurers, staff accountants, and directors of finance. While some government entities use third-party contractors to collect their taxes, none of these contractors were engaged in the cognitive interview process. This was due to two reasons: 1) some respondents were unable to identify the contractors who collected their taxes, and 2) third-party contractors who had been identified were unwilling to participate in the testing, or were difficult to contact.

During the interview, respondents were presented with copies of the draft questionnaire with verbal instructions to complete it. They were asked to complete it if reporting actual data was not too time-consuming or inconvenient. As respondents went through the form, they were asked non-directive questions concerning their interpretation of the language used on the questionnaire and how they would go about retrieving the data necessary to complete it. Researchers probed respondents' responses until a thorough and accurate understanding of the response process was obtained for each item.

4. Results

Prior to the first round of cognitive testing, subject matter staff considered the possibility of sending the revised questionnaire to entities that collect taxes, rather than entities that impose taxes, as had been done previously. At the time, collectors were thought to be able to provide data in a timelier manner. The questionnaire that was tested asked two questions at the beginning, asking respondents to include taxes collected on behalf of another government, and exclude taxes that were collected on their behalf by another government or private entity (see Figure 1 below).

Figure 1. The first two questions on the Quarterly Tax Survey, round 1

1 Does your agency collect taxes for another local government (county, municipal, township, school district, or special district)?

Yes – Include these taxes when completing this form.

No

2 Are any taxes collected on your behalf by another local government or private entity (county, municipal, township, school district, special district, or private collection agency)?

Yes – Exclude these taxes when completing this form.

No

Though respondents generally answered these two questions appropriately, they neglected to follow the instructions when reporting data for the rest of the

questionnaire. Respondents reported amounts that should have been excluded, choosing to interpret the meaning of the questions to include their revenue, regardless of what entity it came from, rather than simply report the value of tax collections during the reference period. Sending a questionnaire like this into production would have resulted in double-counting, and thus an overestimate of taxes each quarter.

While the first round of cognitive interviews was being conducted, Census Bureau staff were also engaged in sample design efforts. When changing the local non-property tax component of the Quarterly Tax Survey from a non-probability panel to a probability sample, a sample of local tax collecting agencies was taken. It was hoped that by going directly to the tax collectors for information on the amounts of taxes collected each quarter, the most accurate data available could be obtained in the timeliest manner possible. However, a full listing of every tax collecting agency in the nation from which to sample was not available, and both time and resource constraints precluded one from being created. Therefore, a cluster sample design was employed. In the cluster design, county-areas⁴ (for which a full listing was readily available) were sampled, and then all tax collecting agencies within each selected county-area were brought into the sample. The total number of county-areas was kept as small as possible. However, once the process of creating a complete mail file for all agencies in the selected counties began, it quickly became obvious that the sample size was too large for the budgetary and time constraints of a quarterly survey. The 316 county-areas in the sample contained over 9,000 tax collecting agencies that would need to be contacted quarterly. This compares with the 111 agencies in the current sample.

In addition to the large number of agencies that were found to collect taxes for each county-area in the sample, it also became apparent that some local governments do not collect their own taxes. These governments hire private agencies to collect the taxes for them, and it is not uncommon for the same private agency to collect taxes for more than one local government. If a single agency collects taxes for more than one local government, then they could receive multiple forms. This would not only be potentially confusing but also burdensome.

The problems with comprehension and interpretation revealed during the cognitive interviews, along with the prohibitively large sample size required for collecting data from tax collectors, indicated that it would be best to change course and collect data from tax imposers. We also found that timeliness would not suffer as a result of surveying tax imposers. Furthermore, a frame consisting of tax imposers was easily built based on information from the Census of

⁴ *The term 'county-area' is used to distinguish between the county government entity and the geography of the county. The county-area is equivalent to the geography of the county and includes all governmental entities within that geographic area. This should not be confused with county government as it may not be the only governmental unit in the county-area and there are several county-areas in which there are no county level governments (i.e., CT, RI)*

Governments, and could be used for sampling purposes. This change in methodology was the result of findings from cognitive testing. The questionnaire was modified to account for this change in methodology, and a second round of cognitive interviews was conducted.

In the second round of interviews, several problems with comprehension and record retrieval were highlighted. First, the questionnaire in the second round asked respondents to exclude any amounts “received for revenue sharing from the state or from other governments.” Though the intention was to instruct respondents to exclude revenue that is imposed at a higher level of government and then given to a lower level, respondents keyed in on the phrase “revenue sharing⁵,” and thought of the long-defunct federal program. Respondents suggested substituting “revenue sharing” with “intergovernmental revenue” or possibly “subventions.”

Between the two rounds of cognitive interviews, the formatting and layout of the item header and question changed. Whereas the first round questionnaire separated the header and the question with some instructions, the second round questionnaire started the question on the same line as the header. In addition, the all-capitals phrase “collected by your agency” was substituted with “imposed,” to take the change in intended response units into account. A question from the first round form can be seen in Figure 2; Figure 3 shows the comparable question from the second round form.

Figure 2. Item header, question, and instructions from the first round of cognitive interviewing

③ SALES TAXES

Include:

- Taxes on goods and services measured as a percent of sales or receipts, or as an amount per unit sold (gallon, package, etc.)
- Current and delinquent amounts, penalties, and interest

Exclude:

- Receipts from service charges, special assessments, interest earnings, fines, and any other sources that are not taxes or licenses

What was the amount COLLECTED BY YOUR AGENCY for each of the following types of sales tax for the three (3) months ending June 30, 2008?

A. General sales and gross receipts taxes.. \$.00

Include:

⁵ Revenue sharing refers to unrestricted funds provided by the federal government to the fifty states and to cities, towns, counties, etc., under the State and Local Fiscal Assistance Act of 1972, which expired in 1987.

Figure 3. Item header, question, and instructions from the second round of cognitive interviewing

1 SALES TAXES – What was the amount of collections for each of the following types of sales tax imposed by your government for the three (3) months ending March 31, 2009?

Include:

- Taxes on goods and services measured as a percent of sales or receipts, or as an amount per unit sold (gallon, package, etc.)
- Current and delinquent amounts, penalties, and interest

Exclude:

- Receipts from service charges, special assessments, interest earnings, fines, and any other sources that are not taxes or license fees
- Sales tax distributions for revenue sharing from the state or from other governments

A. General sales and gross receipts taxes..... \$.00

Include:

Respondents in both rounds of testing thought the questionnaire was intended to collect information about revenue, regardless of its source. In the first round, respondents interpreted “collected by your agency” as monies received from taxpayers as well as other levels of government. However, only the former was to be reported; any monies collected by another level of government then passed along were to be excluded. Respondents in the second round focused so much of their attention on the item header that they missed the word “imposed.” Researchers suspected this was because of the emphasis on the item header, and suggested 1) removing the item header, and 2) underlining the word “imposed.”

Another comprehension problem that arose during the cognitive interviews concerned the use of the words “taxes,” “fees,” and “licenses.” For respondents in a local government context, these three items are conceptually unique. Licenses are intended for regulation of activities, while the purpose of a tax is to raise revenue. Fees, on the other hand, are often administered when a member of the public uses the services offered by the local government, e.g., garbage collection, public parking, park usage. In the first round of cognitive testing, the form contained a section on “license taxes” (see Figure 4). Respondents were somewhat confused by this term since licenses and taxes are conceptually two different items and the words together are incongruous.

Figure 4. Round 1 item header and question regarding “license taxes,” an unusual pairing of words

4 LICENSE TAXES

Include:

- Current and delinquent amounts, penalties, and interest

Exclude:

- Receipts from service charges, special assessments, interest earnings, fines, and any other sources that are not taxes or licenses

What was the amount COLLECTED BY YOUR AGENCY for each of the following types of license tax for the three (3) months ending June 30, 2008?

In addition to the comprehension problems highlighted during testing, several issues regarding record retrieval were demonstrated. In the first case, both rounds

of cognitive interviews indicated that some local governments would have problems reporting details on sales taxes. The sales taxes question asks respondents to split their sales taxes into six categories based on data user requirements: general sales and gross receipts, motor fuels, public utilities, alcoholic beverages, tobacco products, and all other (including hotel/motel, car rentals, amusements, pari-mutuels, and others). Some local governments would include motor fuels, alcohol, tobacco (or some combination of these three items) in the amount reported in general sales detail line. In these cases, local jurisdictions received payments from the state representing their portion of the sales tax, but the supporting documentation did not provide the level of detail required by the form.

While many respondents had problems separating out the details on sales taxes, they had the converse problem when it came to reporting licenses and permits. In the second round of testing, respondents were asked to split out motor vehicles (and motor vehicles operators) licenses from all other licenses and permits (see Figure 5). Respondents indicated that compiling this information involves culling through multiple reports from multiple departments or individuals. They also indicated that underestimating might be a problem, due to lack of complete data. This problem appeared to be more prevalent for larger government entities, such as counties, which tended to have a more decentralized data structure.

Figure 5. Round 2 item on licenses and permit fees

2 LICENSE AND PERMIT FEES – What was the amount of collections for each of the following types of license fees imposed by your government for the three (3) months ending March 31, 2009?

Include:

- License and permit fees exacted (either for revenue raising or for regulation) as a condition to the exercise of a business or non-business privilege
- Current and delinquent amounts, penalties, and interest

Exclude:

- Receipts from service charges, special assessments, interest earnings, fines, and any other sources that are not taxes or license fees

A. Motor vehicles licenses AND motor vehicles operators licenses..... \$.00

Include:

- Licenses imposed on owners or operators of motor vehicles for the right to use public highways, such as fees for title registration, license plates, vehicle inspection, vehicle mileage and weight taxes on motor carriers, highway use taxes, and off-highway fees
- Vehicle sticker fees required to operate motor vehicles
- Licenses for the privilege of driving motor vehicles, both commercial and private

B. All other licenses..... \$.00

Include:

- Alcoholic beverages licenses
- Amusements licenses
- Public utilities licenses
- Occupational and business licenses
- Health permits
- Building and equipment permits
- Marriage licenses
- Hunting and fishing licenses
- Parking permits
- Other license taxes or fees not otherwise specified

Respondents demonstrated some confusion when it came to reporting some specific types of taxes and fees. For instance, hotel and motel taxes were to be included with all other sales taxes. The language used on the form in the first round used the phrase “hotel and motel sales taxes.” Some respondents indicated that hotel/motel taxes are occupancy taxes, rather than sales taxes. Based on results of the cognitive testing, the language was revised to “hotel and motel tax” in the second round of testing, and will be further refined to “hotel, motel, and transient occupancy tax” when the form goes into production.

Franchise fees posed another issue. These are fees exacted on businesses for the right to operate services or systems in the imposing jurisdiction, e.g., cable services. Some respondents reported this information with their sales tax details; others reported it in the last substantive item on the form, “other non-property taxes.” In reality, it should have been reported in another item altogether, though there was no indication to respondents that that was the case. As a result, an instruction will be added to the appropriate item before the questionnaire goes into production.

Finally, many respondents thought it was odd that this particular form does not request information about property taxes, since that is the primary source of revenue for many local governments. Property tax data are collected on a different questionnaire within the same survey program, though that point is not made explicitly clear to respondents. Along with this respondents questioned the purpose of the survey and why the data were being collected. When the survey moves into production, this will be specified in the title of the survey as well as the cover letter.

5. Conclusions

As a result of findings and recommendations from cognitive testing, the Census Bureau has made improvements to the language of the questionnaire for the Quarterly Survey of Non-property Taxes. Subtle differences in the terminology affected the comprehension of the questions, e.g., “revenue sharing,” distinctions among “taxes,” “license,” and “fees.” These subtleties should be expected whenever surveying a diverse population of governments. Therefore, it was important for Census Bureau staff to update the questionnaire to incorporate the language most commonly used by local governments, as well as clear and concise definitions and examples of the type of data requested. For this questionnaire specific names of taxes or license fees were included or expanded in order to represent the variety of tax revenue found in the sample universe. The term “revenue sharing” was replaced with the more universally used term “intergovernmental revenue.” In the license category the word “taxes” was removed to avoid confusion on these revenue items, and the words “permits” and “fees” were added.

Many respondents asked why this survey was being undertaken, what it was used for, and why it did not ask for the largest local tax revenue source. To address these questions a statement of purpose was added to the first page of the survey form. Additionally, respondents will be mailed a letter informing them of being chosen to be in the survey prior to the initial mail-out. This letter will explain the purpose of the survey in further detail and will include a brief explanation of the data that are collected by the other two quarterly tax questionnaires.

While providing more information on the purposes of the survey addresses the questions the respondents had, it does not deal with the tendency of respondents to want to be complete in the information they provide. Evidence from these rounds of cognitive testing, as well as testing on other questionnaires suggests that when respondents are asked to supply only a portion of information they possess on a subject they are prone to want to offer the missing data (Willimack, 2008). In view of this, it may be beneficial for the Census Bureau to consider combining the two local tax portions of the Quarterly Tax Survey in the future to allow respondents to supply more complete data on tax revenue.

Over the course of the two interview rounds it became evident that to maximize efficiency and minimize respondent burden the new sample for the local non-property taxes survey should be selected from tax imposers. For this survey, the choice to survey imposers over collectors greatly impacted the sample size, and therefore the cost of administering this survey. However, selecting imposers over collectors may not always be the least costly way to collect data on taxes. As it turns out, many states collect property taxes at the county level. Given that there are far fewer counties in each state than there are a total of all other local governments, the universe of property tax collectors will be smaller; therefore, the sample size can be significantly reduced by surveying collectors.

In April of 2010 a new sample of approximately 4,000 tax imposers was selected from the universe based on data from the 2007 Census of Governments. Beginning with the third quarter of 2010, the tax imposers selected into the new sample will be mailed the newly designed survey questionnaire. For at least the first four quarters of data collection with the new sample, data from the old non-probability sample will continue to be collected using the old version of the form. During this period of parallel processing a bridge study will be conducted. This study will highlight the differences, if any, in the national estimates of local non-property tax from each sample and attempt to provide some possible explanations. It will also serve as an aid for data users in the transition between the two samples.

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