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Initiatives and Improvements to the Quarterly Summary of State and Local Government Tax Revenue

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Initiatives and Improvements to the Quarterly Summary of State and Local Government Tax Revenue

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Abstract

The Quarterly Summary of State and Local Government Tax Revenue (Q-Tax) provides the most current data available, on a national basis, on government tax revenue. The survey provides estimates of total state and local tax revenue, as well as detailed tax revenue data for individual states. The survey consists of three parts: the survey of local property tax collections, the survey of local non-property taxes, and the survey of state tax collections. In 2007, the National Academy of Sciences issued a report with recommendations for the U.S. Census Bureau's Governments Division; one recommendation specifically addressed needed changes to the Q-Tax survey.

The Census Bureau has addressed recommendation 4.11² and for the past three years has made progress in redesigning the survey questionnaires, developing a probability sample of local governments for non-property taxes, creating better estimation and variance estimation procedures, and developing new editing and imputation methodology. As the initial redesign winds down and the survey moves forward, a new survey has emerged that meets statistical standards and provides higher quality estimates. In this paper, we will discuss the strides the Governments Division has made with the redesign, how the redesign has made the Quarterly Summary a better product, the types of changes users need to be aware of, and what lies ahead for the future of the Q-Tax survey.

1. Introduction

The Quarterly Summary of State and Local Government Tax Revenue (Q-Tax) provides the most current data available, on a national basis, on government tax revenue. The survey consists of three parts: the survey of local property tax collections, the survey of local non-property taxes, and the survey of state tax collections. In an effort to meet the recommendations of the National Academy of Sciences report, the Q-Tax survey has been undergoing a redesign. Progress has been made in redesigning the survey questionnaires, developing a probability sample of local governments for non-property taxes, creating better estimation and variance estimation procedures, and developing new editing and imputation methodology.

This paper provides a background of the survey and its three component surveys. Section 3 discusses the Quarterly Survey of Property Tax Collections and the new edit, imputation, estimation, and estimates of variability procedures adopted. Section 4 discusses the development of the probability sample for the Quarterly Survey of Non-Property Taxes. Section 5 explains the changes in edit and imputation methodology and revision changes for the Quarterly Survey of State Government Tax Collections. Section 6 covers the future research for the survey.

¹ This report is released to inform interested parties of research and to encourage discussion of work in progress. The views expressed are those of the authors and not necessarily those of the U.S. Census Bureau.

² Recommendation 4.11 reads: "The Governments Division should use the redesign of the Quarterly Tax Survey to assess the quality of the sample frame, to develop a probability sample of local governments for non-property tax."

2. Background

State and local governments play a major role in the U.S economy and many aspects of the way people live, conduct business, and interact on a daily basis. As of 2007 there were 89,476 state and local governments (states, counties, cities, townships, school districts, and special districts) in the United States. Spending by these governments represents about 12 percent of gross domestic product or \$2.8 trillion as of fiscal year 2008.³ Federal, state, and local governments educate children in schools; operate and maintain the public road system; administer public safety from assistance with homeland security to local law enforcement and fire protection; and, in some states, act as agents for the sale of electricity, water, waste water, transit, and other utilities as well as run alcoholic beverage retail establishments. This is a small sampling of state and local government functions. Governments differ widely in expenditure and revenue levels, revenue sources and collections, and expenditure programs.⁴ The U.S. Census Bureau's Governments Division provides information on the revenue, expenditures, cash and securities, debt, employment, and other key economic activities of the Nation's federal, state, and local governments. The Division conducts a quinquennial Census of Governments (conducted for years ending in "2" and "7") with annual and quarterly surveys between census years. The data serve two major user communities: users of aggregate statistics – e.g., federal agencies, such as the Bureau of Economic Analysis and the Federal Reserve Bank's Board of Governors, that produce economic time series, such as Gross Domestic Products and the Flow of Funds respectively; and users of micro statistics – e.g., public and private sector public policy experts, public interest groups, and others who want information on state and local governments for research and analysis related to government functions.

The Governments Division conducts two surveys that specialize in tax collections: the Annual Survey of State Government Tax Collections (STC) and the Quarterly Summary of State and Local Government Tax Revenue (Q-Tax). STC is conducted on an annual basis, covers the fifty state governments only, and provides a summary of annual taxes collected for up to 25 tax categories. This survey is similar in purpose and detail to the Quarterly Survey of State Tax Collections (F-72). The main difference between Q-Tax and the Annual Survey of State Government Tax Collections, other than the time frame for conduction of the survey, is the inclusion of local government data in Q-Tax. Also, Q-Tax is conducted using calendar quarters, whereas STC reflects each state fiscal year. STC includes statistics on tax measurement for categories, including sales and gross receipts taxes, individual and corporate income taxes, license taxes, and other sub-category taxes like motor fuels, alcoholic beverages, tobacco, and severance. Similar statistics are collected on the quarterly tax survey, but the information is timelier, although not necessarily as complete due to the shortened data collection period.

The National Academy of Sciences, Committee on National Statistics (CNStat) conducted a comprehensive assessment of the Census Bureau's Governments Division's surveys on the economic activity of state and local governments. In 2007, the CNStat committee 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, user outreach, and challenges for the future were addressed. One recommendation focused entirely on the redesign of Q-Tax. The CNStat committee recommended that Governments Division evaluate the quality of the sample frame, develop a probability sample of local governments for non-property tax measurement, and develop cost-effective variance estimation, editing, and imputation procedures that meet Census Bureau standards. The recommendation states:

³ 2008 State and Local Government Finances by Level of Government and by State: 2007-08

⁴ National Research Council, Committee on National Statistics. *State and Local Government Statistics at a Crossroads*. Washington, DC: National Academy of Sciences, 2007: 1-2

Recommendation 4-11: The Governments Division should use the redesign of the Quarterly Tax Survey to assess the quality of the sample frame, to develop a probability sample of local governments for non-property tax measurement, to streamline questionnaires, and to develop cost-effective variance estimation, editing, and imputation procedures that meet Census Bureau standards.⁵

The universe for Q-Tax includes all state governments, all local government property tax collectors, and all local government non-property tax imposers. The results are compiled from three separate surveys: The Quarterly Survey of Property Tax Collections (F-71); the Quarterly Survey of State Tax Collections (F-72); and the Quarterly Survey of Non-Property Taxes (F-73). State governments report tax revenue by type of tax for 25 tax categories, while local governments report property tax and major non-property tax, such as income tax and sales tax. Data are reported for the tax collections during the preceding calendar quarter. For example, during the third quarter of the year (July – September), data are collected for the second quarter (April-June) of that year. The F-71 includes about 5,000 local property tax collectors; the F-73 is currently a panel of 111 local governments; and the F-72 surveys all fifty states and the District of Columbia. These three survey components have undergone an extensive redesign to ensure proper statistical methods are applied in all phases of the project. The redesign and improvement of all aspects of Q-Tax has been an important effort for the Census Bureau for the past three years. During that time, a new sample was selected and put in place for the F-71 survey; the F-73 survey was expanded from a panel to a probability sample, while the survey was also expanded from a three-question survey to a 25-question survey; and edit, imputation, estimation, and dissemination methods have been redesigned and updated. The change to a probability sample now allows the data user to statistically test quarterly changes. This paper discusses this initiative and provides a more thorough understanding of how the improvements initiated will create a higher quality and more valuable Q-Tax data product.

3. Quarterly Survey of Property Tax Collections

The Quarterly Tax Survey has undergone a redesign of each survey component. The redesign of the Quarterly Survey of Property Tax Collections (F-71)⁶ was completed with the release of the bridge study and National estimates from a new sample in September 2010. The redesign of the F-71 survey included an update of the sampling frame, new edit procedures to reduce unnecessary edit failures, new imputation procedures, and new estimation and variance estimation procedures.

The sample for the local property tax collection is a stratified sample of county-areas.⁷ The questionnaire is mailed to all property tax collectors in a county-area. Prior to mailing, research was conducted on the number of property tax collectors in each county area. Each county in the country was assigned a number based on its number of property tax collectors. Counties assigned a “one” have only one property tax collector, usually the county government; counties assigned a “three” have two to five property tax collectors; and counties assigned a “five” have more than five property tax collectors in the county area. Once these strata were defined, the counties were further stratified by population. County areas with a population of 350,000 or more and an annual property tax collection of at least \$165 million were

⁵ National Research Council, Committee on National Statistics. *State and Local Government Statistics at a Crossroads*. Washington, DC: National Academy of Sciences, 2007: 4-17

⁶ For more information, please see: http://www.census.gov/govs/ntax/get_forms.html

⁷ 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. There are several county-areas in which there are no county level governments (e.g., CT, RI) in the respective geographic areas.

included in the sample with certainty, i.e. these units had a 100 percent chance of inclusion in the sample. There were 289 initial certainty county-area units and 320 non-certainty county areas selected for the sample. The result is a total sample size of 5,409 property tax collectors in the 609 county-areas.⁸

3.1 Editing⁹

Prior to the redesign, the editing process for the F-71 survey operations consisted of a single ratio edit which compared each responding unit's reported amount for the current quarter with the amount for the same quarter in the prior year. The bounds were set to 0.80 and 1.20. The smallest units, those reporting less than \$100,000 in both the current quarter and same quarter prior year, were automatically passed. However, even with the small units automatically being passed, nearly one-third of the respondent units failed this simple ratio edit and required review by the analyst. This was too many edit failures to review with the appropriate attention given the time constraints of a quarterly survey.

In the redesign of the editing process two ratio edits were selected: the ratio of the current quarter to the same quarter last year and the ratio of the change from current quarter to prior quarter this year to the same change in the prior year. For the bounds determination, the Hidioglou-Berthelot (HB) method was used. The priority for HB bounds is placed on identifying data errors that will have the largest impact on the estimate. This method allows larger changes in smaller units to be accepted, while restricting the acceptable amount of change allowed in larger reporting units.¹⁰ In addition to the two ratio edits, edits which ensure internal consistency within the record were put in place. The majority of the edits are identified by the current quarter/same quarter prior year ratio. In some instances in the quarter comparison there is a zero amount reported. A consistency edit flags these units for review if a number greater than zero is reported in the comparison quarter. The goal of the new edits and bounds is to reduce the burden of the edits, not only on the analyst, but also on the respondent, while increasing the quality. Allowing for more tolerance in the edit process helps reduce the edit processing time, while respondents are not contacted as frequently for follow-up calls to verify reported totals. These changes have reduced the editing burden from 1,300 units to about 300 units per quarter allowing for a more targeted review and analysis of the most influential changes in the data.

3.2 Imputation

Prior to the redesign of the imputation methodology, the process used to address non-responding governments in the F-71 survey was to "pull forward" the property tax amount from the same quarter of the prior year until a new response was received. A new imputation method was developed that did not assume that non-responding units never changed. After testing several methods of imputation, two methods were chosen that minimized bias and provided more accurate imputations than the current method of imputation. When historical data are available, imputes are calculated using a median growth rate multiplied by the data from the same quarter in the prior year. In cases where no historical data are available, the missing data are imputed using an adjusted cell mean of the property tax amount.

In constructing an imputation method, units must first be arranged in homogeneous groups so that non-respondents can be imputed using data from units of respondents that are believed to be similar to them. These groups are referred to as imputation cells. Because every county collects property taxes with different rules and methods, imputation cells were constructed using respondents with similar tax

⁸ For more information on the sample design, please see: http://www.census.gov/govs/qtax/how_data_collected.html

⁹ For more information, please see: <http://www.census.gov/prod/2009pubs/govsrr2009-7.pdf>

¹⁰ Hidioglou, M.A., and J.M Berthelot. Statistical Editing and Imputation for Periodic Business Surveys. *Survey Methodology* Vol. 12, No. 1 (1986): 73-83

collecting patterns. For example, if the non-respondent collected property tax in December and June, the respondents in the cell should also collect in December and June. Likewise, it was important to place units that were of the same type of government (city, county, township, school district, special district) and of the same geographic area in the same cell. Since governments in the same geographic area tend to act the same (e.g., local governments in most New England states are defined by the municipal and township type government) the governments in the sample were organized by region prior to imputation. Governments were further classified by tax collection pattern and population.

In the end, 65 distinct cells were defined. It was stipulated that if the number of respondents within any given cell was less than 15 or the total cell response rate was lower than 50 percent, the cell would be collapsed or combined with a similar cell prior to imputation. When cells need to be collapsed, it occurs in the following order: first by population, then type of government, division, and region. The new imputation procedures have been tested and have been used in production since January 2009. The adjusted cell mean imputations and the median growth rates were calculated within the imputation cells.

3.3 Estimates of Variables

The coefficients of variation for the new property tax survey were calculated for the first time with the release of the second quarter 2010 survey results in September 2010.

A new sample was introduced for the F-71 survey for the fourth quarter 2008. For six quarters, beginning with the fourth quarter 2008 and continuing through the second quarter 2010, data were collected simultaneously for both the old sample and the new sample. A bridge study was conducted comparing the differences in the local property tax estimates that resulted from the new survey methodologies. The bridge study, entitled *Bridge Study for the Quarterly Tax Survey: a Study of the Methodological Changes to the Local Property Tax Component*, can be found on the Census Bureau website: http://www.census.gov/govs/pubs/research_reports.html.

With the collection and release of the estimates from the new non-property tax portion of the survey (F-73), coefficients of variation will be calculated for the entire survey. Because all state governments are included in the sample, there is no sampling error for the F-72 part of the survey.

The release of these coefficients of variation will allow the data user to construct confidence intervals around the estimates. Eventually coefficients of variation will also be provided so the data user can test the significance of quarterly changes in the data.

4. Quarterly Survey of Non-Property Taxes

The Quarterly Survey of Non-property Taxes (F-73) provides estimates of local non-property government tax revenue. Data for this survey are collected from local governments ranging from small towns and municipalities to large cities and counties.¹¹ This survey also includes special districts (e.g., sewer and water districts) and school districts. Originally, this survey was a non-probability panel consisting of 111 local governments that have substantial non-property tax collection yields. However, to meet the Census Bureau's and the Office of Management and Budget's statistical quality standards¹² and to address the recommendations set forth by CNStat, this survey is moving to a probability sample selected from the 2007 Census of Governments. In addition to selecting a new sample, the questionnaire is being expanded

¹¹ 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.

¹² Specific information on the Census Bureau's statistical quality standards can be found at: <http://www.census.gov/quality/standards/index.html>

from three tax categories (general sales tax, individual income tax, and all other taxes) to collecting information on an additional eight tax and license categories (motor fuels sales tax, public utilities sales tax, alcoholic beverages sales tax, tobacco products sales tax, other sales and use tax, motor vehicles licenses, motor vehicle operators licenses, and corporation net income tax). 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 statistically sound national estimates for all taxes collected by local governments.

A weakness in the original F-73¹³ survey was that it only collected three categories from 111 local governments, leaving roughly 35 percent of total local non-property tax revenue unaccounted for in Q-Tax's estimates of total local taxes. As a result, estimates of local non-property tax revenue were derived through inflating data collected from the non-probability sample. By replacing the current non-probability sample with a probability sample the Census Bureau will be able to more reliably estimate total local tax revenue. Changing to a probability basis will also allow for the estimation of variance of local non-property tax and total tax revenue, which has not been possible with the non-probability sample.

When changing the local non-property tax component of Q-Tax from a non-probability panel to a probability sample, a sample of local tax collecting agencies was taken. It was expected 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 was not available, and both time and resource constraints precluded one from being created. Therefore, initially, a cluster sample design was employed. In the cluster design, county-areas (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 sampled was kept as small as possible to reduce respondent burden. 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 for this 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 firms to collect the taxes for them, and it is not uncommon for the same private company to collect taxes for more than one local government. If a single firm 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 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. After conducting a round of cognitive interviews, we also found that timeliness would not suffer as a result of surveying tax imposers. A frame consisting of tax imposers was constructed based on information from the 2007 Census of Governments, and used for sampling purposes.¹⁴ A sample of 3,688 tax imposers was selected from the universe listing. The Census Bureau mailed the new sample in January 2011, collecting fourth quarter 2010 data. A dual sample, containing the old sample and the new sample will be used for up to four quarters, during which a bridge study will be conducted comparing the two samples and processing procedures (imputation, editing, and estimation).

¹³ To view the form, please see: http://www.census.gov/govs/ntax/get_forms.html

¹⁴ For additional information on the nature of tax imposers and collectors in regards to the sample methodology, please see: <http://www2.census.gov/govs/pubs/2010pubs/govsrr2010-1.pdf>

5. Quarterly Survey of State Government Tax Collections

The Quarterly Survey of State Government Tax Collections is a survey of tax and license fees at the state level of government. This survey is a census of the fifty states and the District of Columbia. The survey questionnaire (F-72)¹⁵ requests information for 25 tax and license fee categories including sales and gross receipts tax, individual and corporate income tax, motor fuels sales tax, alcohol and tobacco sales taxes, motor vehicle license and operator fees, severance tax, and other miscellaneous taxes. The method of receiving data for the F-72 can be by a completed questionnaire or a compilation of tax revenue from primary source material submitted by one or multiple state government agencies, depending on how the state government is organized. For example, the data for Georgia are compiled using data provided mostly from the Department of Finance; however, the Department of Motor Vehicles provides data separately for tax categories relating to motor vehicles, such as licensing, tags and title.

The extensive modernization and reengineering that the local property tax survey and local non-property tax survey has undergone was not necessary for the F-72 survey because it is a census of all state governments. There are no changes to the questionnaire or editing at this time. However, there are some aspects of the F-72 survey that are in the process of being modernized, namely the edits and imputation methods, and the method of reporting revisions to the public.

The most notable change in the F-72 survey that the user will see will be the way the revisions are presented on Table 3 of the report found on the Census Bureau website (<http://www.census.gov/govs/ntax/>). Revisions can be provided for up to eight quarters by a respondent or Census Bureau staff in the case of direct compilation from primary source materials. Revisions are sometimes necessary to fill in missing or unavailable data from previous quarters, to correct past data errors, or to supply better data when new information is found. Traditionally the reporting method for showing such changes was to have a “revised” cap at the top of the column for the state where an item has been revised. This only indicated that some tax category (or categories) in the state was revised with no direct indication as to which tax category was revised. A new method is being implemented to rectify this issue. The new revision practice for this survey will indicate which particular tax categories were revised in each state, rather than just indicating that the state had a revision. If Illinois, for example, revised its amusements tax for Quarter 2 of 2009, the Census Bureau would indicate a revision on the specific line item, rather than simply state that Illinois data was revised for Quarter 2 of 2009. This will help users identify which categories are being revised and if comparing to the previous quarter, the user will be able to see the magnitude of the revision.

The edit procedures will also be revised. The current edit process compares the current quarter to the same quarter for the prior year. A tolerance of plus or minus 20 percent is set and anything beyond that tolerance is flagged. Developing a new editing system has proved difficult because there are only 51 units in the universe. Three edits will be developed, with the focus still being on the current ratio edit that compares current quarter to the same quarter in the prior year. Two consistency edits will be added. Data will fail edits if the consistency checks of values increasing from zero to a non-zero number or a non-zero number to zero are met. Though individual items fail edits, the 51 units are passed once all the individual edit items are reviewed. A more complex system of edits was found to be unnecessary, due to the limited number of units in the universe and the limited number of tax categories that had enough volatility to be flagged by the edits. The burden on the analyst to check the flagged items was not significant enough to warrant a different editing approach.

¹⁵ To view the form, please see: http://www.census.gov/govs/ntax/get_forms.html

The old imputation method is currently conducted at the state level for states that have not responded in a given quarter. Imputation is done by a system that computes a growth rate for the quarter from the responding states' current data, after removing any significant outliers. The growth rate is then applied to the non-responding states prior data to get an estimate for the quarter. [There are various reasons that a state cannot respond in the time frame of a given quarter, mostly due to timing of their fiscal year end. Most states (90 percent) will respond with actual data within a quarter or two, at which time the imputed data are replaced with actual data and a revision is identified in the data tables.] Individual tax categories that are missing in a state, that otherwise are reporting for the quarter, are not imputed. These items are imputed by the analyst using other data sources or using a growth rate factor. New imputation methods for the F-72 survey are being researched and devised. Some of the key items that are being researched are item imputation as well as whole state non-response imputation. Progress is being made in this area, but no new imputation methods are ready at this time.

Many of the changes discussed above for the F-72 survey are still being evaluated and have not yet been introduced into the survey's operations. However, within the next few quarters users should begin to see the implemented changes. Each methodological change will be released with a complete description of the change.

6. Future Research

Now that the major redesigns of the F-71 and F-73 have been completed and the F-72 is being adjusted, Governments Division will continue to build on the momentum of the past three years and strive toward a goal of continuous improvements to Q-Tax. One aspect of the survey that can be implemented on an ongoing basis is updating the samples. Each of the survey samples will be selected on a regular basis, every five years, in conjunction with the Census of Governments. In doing so, this will ensure the sample is regularly updated, rotated, kept current (which includes incorporating the creation and consolidation of special districts), and will better meet the needs of the data user community while acting consistently with the standards set forth both by the Office of Management and Budget and the Census Bureau. We will also be evaluating the revisions made to the editing, imputation, and sample frames for each component of the survey on a regular basis.

Additional research and improvements for the F-73 survey include sample size and questionnaire content determination. If there is a low response rate on the new F-73 survey we will evaluate the possible reasons for the low response, such as the length of the questionnaire, the language used in the questionnaire, or types of questions being asked in the questionnaire in relation to the taxes collected by the governments in the sample. We will also conduct a non-response bias study, to determine if the non-response is coming from specific groups. In response to these questions, if the questionnaire is not producing the expected results, it will be redesigned. If the respondents in the survey do not collect some of the taxes asked for in the questionnaire, we may reduce the number of tax categories surveyed, which would in turn, allow us to examine the scope of the national tax categories used in Table 1 of this report. If, for example, we find that the majority of governments surveyed only collect sales and use tax, individual and corporate income taxes, and a small amount of miscellaneous license fees, we may examine our national aggregate survey codes and conclude that we only need to survey three or four tax codes at the local level. This would reduce the size and scope of the survey as well as the detail provided for the national estimates by type of tax category. However, if we find that we are not receiving the information that is needed for an effective survey, we may choose to expand the survey to cover more geographic areas – to provide regional estimates for local state and local taxes.

Although a great deal of work has already been done on the F-71 property tax sample, there are still a number of potential options available for future research to further improve the survey. The F-71 survey has been conducted in its current format since 1962. This survey consists of one question, so the burden

to provide a response is relatively minor when compared with other surveys. However, this one question accounts for the largest percentage of local revenues. Property taxes account for 72.3 percent of total local tax collection.¹⁶ Compared with the 16.4 percent that local sales and gross receipts tax comprised of local tax collection, it is evident why there is much interest in the property tax data and the availability of data on a sub-annual basis. Property taxes in some states are comprised of both real and personal property taxes. One option under consideration for the future of the survey is to expand the survey questionnaire to include or allow respondents to separate out the personal property tax from the real property tax. Currently, the questionnaire asks for the total property tax – both real and personal. Before doing so Governments Division would have to conduct a record keeping practices study and cognitive interviewing of data suppliers to see how records of personal property taxes are accounted for and if a change to the questionnaire would increase respondent burden.

Currently the F-71 utilizes a sample based on collectors of property taxes, whereas the new F-73 sample is conducted based on imposers of taxes. A new sampling methodology under consideration for the next iteration of the F-71 survey would be to select a sample based on the universe of governments that impose a property tax rather than those responsible for collecting the tax. For property taxes, the imposer and collector of the property tax are typically the same government entity and most government areas imposing a property tax have a property tax collector – whether it is the county government collecting for all other property tax imposers in the county area, the property tax imposer collecting their own property taxes, or an outsource agency collecting the property taxes for the imposer.

The property tax collector contact information is typically easy to locate in each jurisdiction, but it is not available for every unit prior to sampling. The Census Bureau does not have a sample of collectors; we have a sample of county-areas and select all collectors inside that county area. One reason to evaluate a new imposer sampling system for the F-71 is to reduce the number of special district governments in the survey. However, the imposer sampling method may introduce more school districts into the sample. These governments may impose property taxes, but these taxes are collected in most jurisdictions, by another government, such as the county or townships where the school district is located. The imposer sampling method may also create additional jurisdictions to be added from townships and municipalities that impose property taxes but have agreements with the county to collect the taxes. Instead of receiving the complete information from one source, such as the county, the Census Bureau would be receiving pieces of information from smaller governments.

Another option would be to combine the F-71 and F-73 surveys into one questionnaire. Combining the two local government surveys could potentially reduce respondent burden because one questionnaire, rather than two, can be sent to the government. Assuming that the purpose of the F-71 and F-73 surveys is to obtain a national aggregate of local taxes, and based on current sampling methodology, there would likely be a substantially reduced sample size, thus opening up the possibility of designing a sample that would yield regional estimates.

Selecting a regional sample for one or both (F-71 and F-73) of the samples is also a potential area for future research. By selecting a regional sample, a broader range of information about the public sector economy on a sub-national basis would be available.

7. Conclusion

This paper presented several ideas for the improvement of the Quarterly Tax Survey. In the past three years the Census Bureau has made strides in the redesign of all three component Q-Tax Surveys: new statistical standards have been met; the recommendations of the CNStat report have begun to be fulfilled;

¹⁶ As of the 2007 Census of Governments.

new editing, imputation, and dissemination methods have been implemented; new samples have been prepared; and a new and improved web site has been designed. Though we have made strides, the work is not done; the Census Bureau will continue to be dedicated to the development of a high quality Quarterly Summary of State and Local Government Tax Revenue.

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