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**EXPANDING SERVICE COVERAGE IN THE U.S.
ECONOMIC CENSUSES**

**OVERVIEW OF PLANNING, CONTENT TESTING,
NEW CONCEPTS, IMPLEMENTATION, AND CHALLENGES**

**Sidney O. Marcus, III
United States Bureau of the Census**

Background for Paper

The subject of this paper is not new - it's evolving. Five years ago I authored and presented "The Economic Census in the USA -- Improved Statistics on Services" at the Voorburg meeting in Ottawa; two years ago Ms. Laurie Torene of my staff authored and presented "Recent Improvements to Service Industry Data Coverage at the United States Bureau of Census" at the Voorburg meeting in Williamsburg.

As in any journey, the farther we travel, the more we learn about where we have been -- so it is with this paper, which builds on the previous two and carries us farther along the uncharted path of newly-covered industries. The ongoing analysis of census questionnaires lends a different view to the results imagined in the planning phase and uncovers new issues.

The scope of this paper is limited to the additional industries included in the 1987 and 1992 quinquennial economic censuses. Prior to 1987, the service sector coverage within the Economic Censuses included Retail, Wholesale, Service (business and personal services, social services, health services and educational services), and a very small part of Transportation.

The purpose of this paper is to draw attention to the extent, planning, and results (thus far) of the services expansion experience in the United States. To the extent that the topics herein are applicable to your own country, may you prosper from our experiences.

Background of Expansion Efforts

In recognition of the increasing importance of the services sector (and resulting demand for more data) and in reaction to the changes brought about by numerous factors listed below, the United States has been taking steps to increase data for the service sector.

As you know, during the last two decades there has been a marked and sustained growth in the level of service industries in the U.S. The reasons for the growth include: The changing demographics (more two-wage earning families, increased disposable income, more single heads of households, and longer life expectancy), added emphasis on leisure activity, new technology creating service industries that did not exist a few years ago, the recent government deregulation of some segments of the economy, and businesses changing the ways in which they deliver goods and services (increase in the level of secondary services being performed, and the trend toward contracting out for services previously provided in-house). These above factors have caused shifts in consumer spending patterns, which leads to new industries (e.g., lawn maintenance services, video rental, child vanpool services, paging services, etc.), and renders others obsolete (e.g., radio and television repair shops).

Activity Up . . . Data Sources Down

The increased relative importance of service sector industries in the economy, reduced availability of data on government-regulated industries, deregulation (and consequent reshaping) of some industries, and rapid change in the structure of many service industries have all contributed to the need for better data. Data users have indicated that they need data for more industries, as well as more detailed data to properly measure and understand the intricate changes in the economy.

Taken So Long

One might ask why it has taken so long for the Census Bureau to include the additional service industries in its census program. Reasons fall into three categories.

First, in its mandate to keep respondent burden to a minimum, the Office of Management and Budget (OMB) takes measures to assure that data collection efforts are not duplicated by government agencies. Prior to the deregulation, by-product statistical data were produced by the regulatory authorities. With the recent deregulation¹ that has occurred (and even where some regulation still exists), the amount of available statistics (both regulatory and general-purpose) have been limited or sharply reduced.

With the rapid growth in services in the economy and changes in the way services were delivered, the available statistics on services were being reduced due to decreased data collection efforts associated with deregulation. Private industry's and trade associations' attempts to collect data on a voluntary basis for these missing segments have fallen short in part due to statistically unrepresentative memberships. Association membership lists are usually incomplete; and sometimes include members whose primary concern does not coincide with the association's. Also, response can be poor since there is a built-in reluctance for a company to provide operating data to a group whose staff may well work for a competitor in the future.

Secondly, the Economic Censuses are conducted under provisions of Title 13, U.S. Code, which precludes the Census Bureau from collecting data from transportation industries where data are compiled and published by a regulatory body.

Thirdly, the economic classification and data collection programs have historically been goods-producing based. Since data collection agencies (including the Census Bureau) have been unable (or reluctant) to make any abrupt change in the ways they do business, the past practices continue to influence the present programs.

¹ Examples -- The Motor Carrier Act of 1980 has removed most trucking firms from Interstate Commerce Commission regulation. The court-ordered breakup of AT&T (the telephone monopoly) has created about 500 independent telephone companies.

The Census Bureau does not operate in a "blank check" environment. The government agencies which fund the Bureau's programs are not cognizant of the data shortfalls until they are made aware of it by constituent groups. In a successful effort to improve statistics on services, several private and governmental organizations have been formed and have lobbied supported attempts in these areas.

For example, the Coalition of Service Industries (comprised of executives from large, private companies) was formed in early 1982 to represent the interests of the services sector of the U.S. economy. The Coalition, along with various government agencies, trade associations, companies, and academia, have been vocal and effective in requesting additional and improved service industries data collection efforts.

Expansion of Coverage in Services Sector

Two-Tiered Approach

Service sector industries in their broadest definition (Wholesale, Retail, Services, Transportation, Communications, Utilities, Finance, Insurance, and Real Estate) now account for approximately 73 percent of Gross Domestic Product (GDP) and about 72 percent of civilian employment in the U.S. In recent years the Census Bureau has undertaken what amounts to the largest single expansion in industry coverage of the Economic Censuses since 1930² (when the Retail and Wholesale industries were first included). The Bureau has implemented a two-tiered expansion that began in 1987 and continued for 1992. By expanding to include additional industries, the non-goods producing industries sector achieves coverage (although not content) parity with the goods producing sector.

Phase I:

For the 1987 Censuses, the new industries included: Hospitals; Trucking; Water Transportation; and the rest of Other Transportation Services. This phase of the expansion accounted for over 110,000 establishments with payroll, over 4.7 million employees, payroll of \$96 billion, and effectively increased the economic censuses' coverage from 84 to 88 percent of the nation's employees.

²

The 1977 Economic Census included a large services expansion effort. Health, education, social services, membership organizations, and travel agents were included for the first time.

Phase II:

For the 1992 Censuses, the Census Bureau further expanded coverage to include 14 of the remaining 18 Transportation industries plus the 21 Communications and Utilities industries, plus the 53 Finance Insurance, and Real Estate (FIRE) industries. This phase of the expansion added over 650,000 establishments with paid employees, over 9.6 million employees, and payroll of over \$290 billion³ and increased the economic censuses' coverage from 88 to 98 percent of the nation's employees⁴.

Pretest

A pretest was conducted to examine terminology (industry-specific interpretation), adequacy of the universe frame (e.g., SIC coding, administrative data), respondent burden use of toll-free telephone number, and several other "housekeeping"/methodological items, such as varying follow-up letters and varying emphasis on the legal filing requirement on the mailing materials.

The pretest (comprised of 23 different report forms and variations) was mailed in October 1990 to approximately 3,200 establishments in the additional industries in transportation, communications, and utilities⁵ (TCU) and to 4,900 establishments in finance, insurance, and real estate (FIRE).

1992 Census

The census was mailed in December 1992. For TCU, 6 different establishment forms (covering 28 industries) were mailed to all 52,400 establishments with paid employees. For FIRE, 12 different establishment forms (covering 53 industries) were mailed to 383,400 establishments with paid employees. Small single-establishment insurance agencies were sampled.

Response rates were 88.3 percent and 88.0 percent respectively. Analysis is now being performed, with plans to publish basic data (classification, establishment counts, revenue, payroll, and employment) by early 1995.

³ 1991 County Business Patterns

⁴ The missing component is comprised of elementary and secondary schools, colleges and universities, labor unions, political organizations, religious institutions, railroad, U.S. Postal Service, and scheduled air carriers.

⁵ Excluded were large scheduled passenger air carriers reporting on Form 41 to Department of Transportation, telephone and telegraph companies reporting on Form M to Federal Communications Commissions (primarily large local exchange carriers), and multiunit electric and gas utility companies.

Results from the pretest have been analyzed and used in the design and implementation of the census. The issues known before the pretest and those discovered in the pretest and census comprise the remainder of this paper. Since the Bureau is in the midst of tabulating and analyzing data from the census, many quantitative measures are still sketchy or lacking. Therefore, within each issue of this paper, the text reflects the most recent information available (pretest or census results).

ISSUES

SIC Manual Considerations

The collectibility and usability of data are very much dependent on the definitions contained in the Standard Industrial Classification (SIC) manual, the "reference book" which defines industry classification and definition of establishment for the Census Bureau.

Establishment definition -- Using an establishment-based (i.e., physical location) system, a location performing economic activity is defined, classified, and measured (revenue, payroll, employment) according to the primary economic activity performed at that location. For most industries the physical location is synonymous with a distinct operating unit and basic data measures are available and appropriate for each location (e.g., hotel, manufacturing plant, restaurant).

However, a growing number of industries do not lend themselves to this strict physical location/establishment concept -- especially those industries which are defined by groups of functions that are physically separated. For example, the SIC defines a state commercial bank (SIC 6022) as a commercial bank or trust company accepting deposits. However, a state commercial bank which receives deposits and provides other customer services at a "retail" branch location, may well receive mail deposits at a central location, and receive and process loan applications at a different central location, and manage investments of the bank's funds (i.e., generates revenue) at yet a different central location. Each of these locations is an essential part of the "bank" activity, but if classified strictly on what happens at the particular location, the establishment would not be classified as an operating bank, but as an auxiliary. For the census, we classified such locations as banks if the activity was "closely" related to banking (e.g., loan processing). However, other "less closely" related activities performed by enterprises known as "banks" (such as mutual fund sales, insurance sales, sale of repossessed homes) are classified according to the activity being performed -- not banks.

In addition, since the functions are so fragmented, it is generally not possible or necessarily appropriate to allocate revenue to each location. For example, consider transportation companies which have terminal yards, industrial sidings, and other sites to service trains, trucks, and cargo. Although these locations are the places where the real activity occurs, revenue is not

recorded at these locations. Since many depository banks, insurance carriers, pipelines, telephone and telegraph companies, and gas and electric companies operate this way, special handling was required in the census. For these industries, in which establishment data per se was not relevant, the special handling involved two deviation from the norm. First, locations which would ordinarily be considered auxiliary functions were considered operating establishments, and second, revenue was collected at the state level by company. Individual locations still reported payroll and employment.

Industry Classification -- Another problem with the SIC definitions is that they do not necessarily reflect the kinds of activities in which the newly covered industries are engaged. An example is classification of investment offices, which depends on whether open-end or closed-end investment funds are sold. However, responses indicated it is quite common for an establishment to sell both closed-end and open-end funds. Many of these establishments identify themselves simply as "investment offices." Furthermore, the industry has recently been moving toward a hybrid security which has characteristics of both open-end securities and closed-end securities. The issuers of hybrid-securities do not fit neatly into the current SIC codes.

Another SIC definition problem encountered was the difficulty in classifying an establishment which provided both gas and electric services. The SIC manual classifies electric company services in SIC 4931, gas company services in SIC 4932, and those producing both gas and electric in SIC 4939.

Universe Frame Considerations

Since the results of a statistical study can never be more accurate than the universe (sampling frame) from which the study is drawn, the issue regarding the adequacy of the Standard Statistical Establishment List (SSEL) (the Bureau's economic establishment universe) is critical. The areas of concern to the Bureau are identification of locations with economic activity, linking establishments according to ownership, and classification, size, and geographic location.

Employer Identification Number -- The SSEL uses the taxpayer identification number (IRS Employer Identification (EI) number) to identify business enterprises. In these new areas especially, businesses use these EI numbers for various purposes, including accounting convenience, tax strategy, and identifying individual undertakings -- all of which may identify some entity other than a distinct business "location." One example is a pension fund, which is required by law to have its own separate EI number. These funds appear on the census mail file and look like any other operating business. We studied this issue and decided to include the entity that manages the funds (including the fund itself if it is self-managed), but exclude the fund itself if it does not include the management function. A question was developed and added to the questionnaire to make this distinction.

It was also discovered that some firms, most notably large securities dealers and banks, had requested (and been assigned) additional EI numbers for

accounting reasons. The additional EI numbers were used to account for payroll (part-time v full-time), various overhead expenses, and income. One bank even requested (and was assigned) separate EI numbers for each defaulted property. The Bureau went to extensive efforts to determine which EI's did not represent separate locations and should be deleted, which ones should be retained, and how to prorate data among those retained.

SIC Codes Derived from Administrative Records (ASIC)-- In a first time survey, forms are mailed to single establishment firms based on industry codes assigned solely from administrative records. These codes may be outdated (company has shifted type of business) or may simply be coded to less detail than the census requires. The accuracy of the industry codes at mailout determined how many establishments get a correct questionnaire, as well as the reliability of classification when imputing for non-response cases.

In order to measure the accuracy of the ASIC, pretest respondents' self-designated SIC codes were compared to the ASIC. The results for FIRE indicated that 27.8 percent of those establishments self-designated an SIC which did not match the ASIC even at the 2-digit level (e.g., mailed out as SIC 6411 (Insurance agent), but self-designated SIC 6531 (Real estate agent)). Those not matching at the 3-digit level accounted for 40.6 percent, and those not matching at the 4-digit level accounted for 54.5 percent.

For TCU, self-designated codes differed from the ASIC at the 2-, 3-, and 4-digit level for 5.4 percent, 34.4 percent, and 43.9 percent of the establishments, respectively ⁶.

For industries where questionnaires are industry-specific, discrepancies between ASIC and final SIC codes cause mismailing. A survey ⁷ of single establishment firms in the expanded areas was mailed in February of 1992 in order to improve the mail file prior to the 1992 Census forms selection and labeling. Its specific goals were to identify multi-establishment companies, update company affiliation, and provide more accurate industry codes for mailing the 1992 Census.

Knowing that the ASIC will never be completely correct for all industries, for industries where significant industry crossover existed, SIC codes and other inquiries "foreign" (yet distantly related) to the census form were added (e.g., insurance agent questions were listed on the form for real estate agents). This allowed the Bureau to use data from the original questionnaire, without having to remail a correct form.

⁶

Rather than relying solely on self-designation, further analysis included response to other questions which reduced the mismatches (at the 4-digit level) from 54.5 percent to 31.4 percent for FIRE and from 43.9 percent to 35.5 percent for TCU.

⁷

1992 Economic Censuses Affiliation Report, Form NC-9921

Another problem noticed in the analysis is that a significant (as yet unmeasured) number of establishments primarily engaged in franchising were not identified in the SSEL. It was learned that franchising activity is frequently performed at a central administrative or wholesale location, and is not separately identified as franchising. In the future, consideration needs to be given to adding questions to company (and other trade area) report forms, in order to locate and measure this and other hidden activities.

Administrative Revenue -- Another shortcoming in the newly covered industries is due to differences in the definition of administrative revenue (used to edit data for respondents and to replicate data for non-respondents and non-mail cases) compared to the definitions used on the census questionnaires themselves.

The Bureau obtains administrative sales (or receipts) from a specified line (sales, less returns and allowances) from tax forms used by most businesses. This sales value is the one which the Bureau considers as output for retailers. However, for the FIRE industries, use of this value may severely understate economic activity. For example, interest income is a major component of economic activity for banks; rent for real estate companies; royalties for franchisors; and gains/losses for investors -- all of which may not be included in the "standard" administrative receipts value⁸. These data items are listed separately on other lines on the tax forms, but the Bureau had not been authorized access to these other data values. For the 1992 Census, based on the overall data volume, the Bureau asked for and received authorization for rent and interest data. Royalties and gains/losses were not requested due to budgetary priorities.

Another problem was that the above authorization granted access to IRS Form 1120 (form used for most corporate tax returns), but not specialized forms, e.g., 1120-L (Life Insurance companies). Again the Bureau requested (and received) authorization from IRS for access to the "standard" administrative data items from these specialized tax forms.

Coverage Decisions

Excluded Industries -- After the pretest data were analyzed, decisions regarding final coverage for the 1992 Census were made. It was decided that four of the TCU industries would not be included. Two railroad, the U.S. Postal Service, and the certificated airlines industries were excluded because the industries are composed of relatively few large companies and good data are readily available. Also, for the two railroad industries, due to differences in retirement and social security laws, they are not included on the SSEL.

⁸

According to tax law, a business entity, whose purpose is to collect rents, is to report rents on the "sales, less returns and allowances" line on the tax form. Comparison of census returns to administrative data indicates that many times responses do not match.

Tax-Exempt Firms -- Section 501 of the IRS Tax Code grants exemption from federal income tax for firms engaged in certain activities. Within the expanded service area, these firms include credit unions, some kinds of insurance companies, fraternal beneficiary societies, and public broadcasting. The question was raised early in planning whether tax-exempt entities required special treatment in the expanded areas. For industries where a significant portion of the activity is provided by firms exempt from federal income tax, and where there exists significant differences between the operating characteristics of taxable firms v. tax-exempt firms, the Bureau normally publishes data separately. Since most of these added industries derive their revenue in much the same way as their commercially-operated taxable counterparts, there were no separate tabulations.

Government Operations -- Traditionally, the economic censuses exclude establishments which are operated by an entity of the government (there is a companion Census of Governments⁹) or by elected officials. [Exceptions--liquor stores and hospitals, where government-operated establishments constitute a substantial part of the industry and are included in the economic censuses.] The 1992 expansion included some industries which have sizable public (government) components. Examples of industries with significant state and local government operation include public utilities, school bus services, and sanitary services. In some states these activities are exclusively private, in some, exclusively public, while in others, a mixture. Examples of industries with significant federal government operation include banks operating under government receivership, companies insuring deposits, and companies guaranteeing loans. A drawback in creating a complete mailing list is the fact that the private operators can be identified from one administrative source (IRS); whereas, creating a universe list of government establishments by industry would require access to countless administrative lists (if in fact, they exist). Another drawback is that some of the activities may not be separately identified from other public governmental functions (e.g., some governmental units might have data for school bus operations separate from physical school plant operations, whereas others might combine the two). Therefore, due to the above considerations, coverage of government operations was limited to the Federal Reserve Banks; Banks, Savings and Loans, and Credit Unions; and Federal and Federal-Sponsored Credit Agencies.

⁹

A Census of Governments is taken in conjunction with the quinquennial economic censuses. The Census of Governments covers four subject fields - government organization, taxable property values, public employment, and government finances, all of which have little resemblance to the economic censuses data products.

Response Considerations

"Mandatory" Printed on Envelope -- Early conversations with participants in focus groups and respondents in recordkeeping practices surveys indicated that mandatory filing was the most effective incentive to report. In an attempt to increase response rates, one pretest report form version had a mandatory filing requirement statement imprinted on the envelope. With a control universe in place, the pretest results showed that the response rate appeared to be higher in the group with the mandatory statement. Based on these results, the mandatory filing requirement was printed on the envelopes for the entire 1992 Economic Census.

Toll-free Telephone Assistance -- In an attempt to measure the usefulness and workload associated with a toll-free (800) telephone number, a toll-free number was included on the cover letter and mailed to a sample in the pretest. The number of calls received far exceeded expectations. During the period October 1990 through March 1991, 17.4 percent of the sampled universe called. Most of the calls did not involve difficult subject matter questions and were handled by trained clerical personnel during the census. Most calls related to requests for general information, specific data inquiries, receiving the "wrong" form (e.g., an insurance agent identified in administrative records as a real estate agent and therefore, mailed a real estate form), data not available, time extensions, and requests for an additional copy of the form after a follow-up reminder.

Testing of the toll-free number also provided information on timing of calls - duration of call, time of day, day of the week. Based on results of the pretest, the toll-free number was provided to all respondents across the economic censuses in 1992.

Data Considerations

Write-in SIC -- Our experience is that the service industries have a disproportionate number of respondents who do not readily identify with pre-listed industry classifications on forms and, instead describe themselves in their own terminology ("write-in" descriptions). These write-ins represent a great variety of activities, are time consuming to review, and may or may not be easily assigned to an SIC code.

Pretest results indicated that 21.8 percent of those indicating an SIC included a write-in description. Many of these write-ins were repeats of descriptions of industries already listed on the form; however, many were variations or completely different. Based on review of the pretest, additions and revisions to the prelisted industries were made to the final census forms. The efforts paid off--results from the census indicate that only 7.4 percent of the FIRE (8.4 percent, TCU) returns had write-in SIC descriptions. In an effort to facilitate clerical review, for the first time in the history of the censuses the first 20 characters of the write-in descriptions were keyed into the data records. These descriptions will be useful for SIC revisions, future analysis and forms design, and in identifying emerging industries.

Self-Designated SIC -- Since the newly covered industries had no SIC from previous census questionnaires, and (especially for FIRE) the classification does not depend on what is sold (rent can be collected by banks, insurance companies, real estate companies, etc.), classification very much depends on what the respondent self-designates.

Analysis of the pretest results indicated cases where the respondent self-designated incorrectly as a result of the wording or sequence of SIC's on the form. An example of this occurred on one of the real estate forms where KB descriptions for owner-operators (lessors) by type of building occurred before real estate agents and property managers. Many agents and managers (with correct mail SIC's) identified as "owner-operator" of buildings by type, presumably reading it as the type of buildings bought, sold, or managed. They also then checked "agent" or "manager". The 1992 Census forms incorporated wording changes and placements and the edits were written to remedy this type of problem.

Employees v. Self-Employed Agents -- Another problem noticed was the collection of payroll and employment data. The Bureau follows the definitions used in the tax laws, some of which can be very confusing. However, some industries make large use of self-employed, independent contractors and pay commissions - not payroll. Since the payroll and employment data by themselves severely underestimate the activity associated with these industries, the Bureau added some questions on selected questionnaires to collect data on agents and commissions. These data will be published separately, to allow data users to reconstruct the "entire work force" picture.

Measure of volume

The Bureau attempts to measure economic activity in terms which are comparable across the different economic censuses--both input and output measures. The input measures (payroll and number of paid employees) have standard definitions and are basic data measures collected for all establishments. However, for output measures, while trying to maintain consistency across the sectors in order to create as cohesive a set of economic data as possible, the censuses vary somewhat by sectors - value of shipments for manufacturing, value of construction for construction industries, sales for retail and wholesale, operating receipts for most service industries subject to Federal income tax, and revenue (which includes operating receipts for services rendered and non-operating receipts (grants, rents, dividends, interest, gains on sale of assets...)) for service industries exempt from Federal income tax.

For FIRE industries, total revenue is being requested on the forms. A supplemental inquiry requesting major sources of revenue will allow users to separate the components of revenue to tailor output measures for their own use. Operating receipts are being requested of TCU industries. For the broadcasting, cable, and highway passenger transportation industries, where there is a significant contribution from the tax-exempt companies, there is a supplemental inquiry requesting non-operating receipts (i.e., subsidies).

GAAP v. RAP -- Some of the newly covered industries (e.g., banking, insurance, securities) are still regulated to some extent by state and federal agencies, and therefore, keep records according to regulatory terminology and concepts. The purpose of regulation is to monitor each firm's overall ability to meet its financial obligations and to measure a firm's solvency, not to provide economic data for national accounts. Many firms may use these regulatory accounting principles (RAP) (which differ from the generally accepted accounting principles (GAAP) used by firms in unregulated industries) to calculate much of their financial data and possibly report the same to the Bureau.

This presents a problem for the Bureau to the extent that GAAP-based data differs from RAP-based data. The Bureau instructed the respondents to convert RAP-based data to GAAP for the affected industries in order to provide a more consistent measure across all industries. Whether the respondents followed these instructions will be examined at a later date.

Finance Leasing -- It was expected that banks and other financial institutions would treat finance leases (capital leases) in a manner similar to retail and wholesale businesses, where the entire transaction is treated as a "sale" with a "principal" component and an "interest" component. It was found, however, that these institutions count as receipts only the interest portion of the lease. The census receipts data will therefore only include the interest. The principal portion, i.e. the acquisition cost, will be reported in a separate inquiry along with the "fair market value" of the leased items.

Wrap-up

As stated earlier, this paper updates previous papers with similar topics. Once the public use data are analyzed and published, resources can be invested to study and measure the impact of issues raised in this paper (as well as newly discovered issues). It is the author's hope that each of the various readers may find one or more issues pertinent to his or her country, and may prosper from the U.S.' experiences.