

New Area Sample Selected for the National Compensation Survey

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The National Compensation Survey has selected a new area sample using the statistical area definitions issued by the Office of Management and Budget based on the the results of the 2000 decennial census.

The sample design of the [National Compensation Survey \(NCS\)](#) is an area-based design. In an area-based design, the survey sample is drawn from selected areas called Primary Sampling Units (PSU), rather than being dispersed across the entire Nation. This design permits the publication of local estimates and more efficient use of collection resources.

The NCS currently uses Office of Management and Budget (OMB) area definitions that are based on the 1990 decennial census.¹ The sample used for all NCS products currently includes 18 Consolidated Metropolitan Statistical Areas, 63 Metropolitan Areas, and 73 nonmetropolitan counties.² Every 10 years, following the decennial census, OMB issues a new set of area definitions for the United States. A sample redesign of the NCS is necessary each decade to conform to the new OMB area definitions.

Area Definitions

In 2003, OMB issued new area definitions based on the 2000 census. OMB defined 361 Metropolitan Statistical Areas and 573 Micropolitan Statistical Areas in the Nation. A Metropolitan Statistical Area has at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core, as measured by commuting ties. A Micropolitan Statistical Area has at least one urban cluster of at least 10,000 but less than 50,000 population, plus adjacent territory that has a high degree of social and economic integration with the core, as measured by commuting ties.³ OMB also defined a list of Combined Statistical Areas (CSAs). If specified criteria are met, adjacent Metropolitan and Micropolitan Statistical Areas, in various combinations, may be joined together to form a CSA.

County Clustering

There are 1,359 counties in the Nation that are not included in either a metropolitan or a micropolitan statistical area. Under the 2000 area definitions, OMB no longer refers to counties outside of a metropolitan area as "nonmetropolitan." Any county not included in a metropolitan or micropolitan area is considered a county outside of a Core Based Statistical Area (CBSA).⁴ One important change in the NCS is how a sample of these "outside-CBSA" counties is selected. In the past, the NCS considered any county outside OMB-defined areas as a single sampling unit. However, a county with particularly small employment can cause weighting, variance, and publication problems if it is selected for the NCS sample. Instead of continuing to treat these counties as single sampling units, most outside-CBSA counties are combined to create larger sampling units. These larger sampling units will mitigate some of the problems associated with small survey areas. With some exceptions, contiguous counties within the same census division were combined to form clusters with a total employment of at least 10,000 workers and with heterogeneous wage levels. The employment minimum of 10,000 was chosen after research was conducted to measure the impact of clustering on the component of variance arising from the sampling of areas.⁵ Clusters with heterogeneous wage levels were formed because clusters with wide wage distributions should lead to lower between-PSU variances. The result is a list of 436 county clusters formed from an original list of 1,359 outside-CBSA counties.

Customer Needs

In addition to maintaining the quality and availability of the Employment Cost Index (ECI), Employer Costs for Employee Compensation (ECEC), and benefits data for the incidence and provisions of selected employee benefit plans, the NCS must

also meet the requirements of the President's Pay Agent and other data users.⁶ The Pay Agent is required under the Federal Employees Pay Comparability Act of 1990 to recommend salary rates for Federal General Schedule workers on a locality basis.⁷ As required by the act, each year BLS provides the Pay Agent with earnings data for the major centers of Federal employment as well as for the rest of the United States. The "rest of the United States" consists of all Metropolitan Areas, Micropolitan Areas, and outside-CBSA counties (excluding Alaska and Hawaii) not designated by the Pay Agent for locality-based rates. At this time, the Pay Agent is requesting locality wage data for 27 Combined Statistical Areas and 7 Metropolitan Statistical Areas. These 34 areas were selected with certainty for the new area sample of the NCS.

Area Sample Allocation And Selection

The new area sample for the NCS contains 152 areas. Initially, the certainty areas were identified. (See table.) Certainty areas are any individual areas with an employment greater than 80 percent of the sampling interval. The 34 areas designated by the Pay Agent were selected as certainty areas. The sampling interval is the total employment across all areas divided by the total number of areas to be selected. After the certainty areas were identified, the remaining number of sample areas were allocated approximately proportional to total employment across the Metropolitan Areas, Micropolitan Areas, and Outside-CBSA County Clusters by nine census divisions. The result is 57 certainty areas, 60 noncertainty Metropolitan Areas, 22 noncertainty Micropolitan Areas, and 13 noncertainty Outside-CBSA county clusters. Data from the sample of areas can be aggregated to represent nine geographic divisions and the United States as a whole. Larger areas--that is, the certainty areas--represent only themselves in these broader estimates, but smaller areas, in addition to representing themselves, represent other areas that are not part of the sample.

The noncertainty Metropolitan Areas were selected using a new methodology. One of the main outputs of the NCS is annual locality wage publications for as many of the sample areas as possible. The NCS uses a rotating panel design, which means that the NCS replaces about one-fifth of the sample in each area every year. Under this rotating panel design it could take several years for the sample in new areas to become large enough to produce reliable estimates, so the number of annual locality publications during the transition between the old and new area samples could be decreased. Therefore, a decision was made to use a sample overlap procedure to preserve as many of the old sampled PSUs as possible. The NCS used an overlap procedure which resulted in the selection of 31 out of 32 possible Metropolitan Areas that were noncertainty in both the old and new designs.⁸

Implementation

The exact timeframe for introducing and publishing areas in the new sample has not been determined. An announcement will be made later in 2005 on the planned implementation of the new area sample, as well as publication plans.

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NOTE: This is a revised version of an article that was originally published in March 2005. This version corrects the table title to "List of Areas Selected for the New Area Sample of the NCS." It also corrects footnotes 2, 6 and 7. Footnote 7 also includes a corrected and updated link to the most recently published *Annual Report of the President's Pay Agent*.

End Notes

¹ For details on the 1990 census area definitions, see *Federal Register* (55 FR 12154 - 12160, March 30, 1990); or OMB Bulletin 95-04; available on the Internet at <http://www.whitehouse.gov/omb/bulletins/95-04attachintro.html>; see also *Geographic Areas Reference Manual* (Bureau of the Census, November 1994), ch. 13; available on the Internet at <http://www.census.gov/geo/www/GARM/Ch13GARM.pdf>.

² For additional information on the earlier design, see Kenneth J. Hoffmann, "New Sample Areas Selected for the BLS National Compensation Survey Program," *Compensation and Working Conditions*, spring 1997; available on the Internet at <http://www.bls.gov/opub/cwc/archive/spring1997art4.pdf>.

³ The criteria for defining Metropolitan, Micropolitan, and Combined Statistical Areas are published in the *Federal Register* (65 FR 82228-38, December 27, 2000); available on the Internet at <http://www.census.gov/population/www/estimates/00-32997.pdf>.

4 The criteria for defining Core Based Statistical Areas are published in the *Federal Register* (65 FR 82228-38, December 27, 2000); available on the Internet at <http://www.census.gov/population/www/estimates/00-32997.pdf>.

5 For more information on county clustering and problems that led to this decision, see Y. Izsak, L. R. Ernst, S. P. Paben, C. H. Ponikowski, and J. Tehonica, "Redesign of the National Compensation Survey," *2003 Proceedings of the American Statistical Association*, CD-ROM (Alexandria, VA, American Statistical Association, 2003).

6 The President's Pay Agent is comprised of the Secretary of Labor, the Director of the Office of Management and Budget, and the Director of the Office of Personnel Management.

7 An explanation of the Federal Employees Pay Comparability Act of 1990 can be found in *Report on Locality-based Comparability Payments for the General Schedule: Annual Report of the President's Pay Agent, 2004*, (Office of Personnel Management, December 2004); available on the Internet at <http://www.opm.gov/oca/payagent/2004/2004PayAgentReport.pdf>.

8 The NCS used the overlap procedure outlined in B. D. Causey, L. H. Cox, and L. R. Ernst, "Applications of Transportation Theory to Statistical Problems," *Journal of the American Statistical Association*, December 1985, pp. 903-09. For more information, see L. R. Ernst, Y. Izsak, and S. P. Paben, "Use of Overlap Maximization in the Redesign of the National Compensation Survey," *2004 Proceedings of the American Statistical Association*, CD-ROM (Alexandria, VA, American Statistical Association, 2004).

Table. List of Areas Selected for the New Area Sample of the NCS
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Selected Combined Statistical Areas
Atlanta-Sandy Springs-Gainesville, GA-AL
Boston-Worcester-Manchester, MA-NH
Buffalo-Niagara-Cattaraugus, NY
Chicago-Naperville-Michigan City, IL-IN-WI
Cincinnati-Middletown-Wilmington, OH-KY-IN
Cleveland-Akron-Elyria, OH
Columbus-Marion-Chillicothe, OH
Dallas-Fort Worth, TX
Dayton-Springfield-Greenville, OH
Denver-Aurora-Boulder, CO
Detroit-Warren-Flint, MI
Hartford-West Hartford-Willimantic, CT
Houston-Baytown-Huntsville, TX
Huntsville-Decatur, AL
Indianapolis-Anderson-Columbus, IN
Los Angeles-Long Beach-Riverside, CA
Louisville-Elizabethtown-Scottsburg, KY-IN
Milwaukee-Racine-Waukesha, WI

Selected Combined Statistical Areas
Minneapolis-St. Paul-St. Cloud, MN-WI
New York-Newark-Bridgeport, NY-NJ-CT-PA
Philadelphia-Camden-Vineland, PA-NJ-DE-MD
Pittsburgh-New Castle, PA
Raleigh-Durham-Cary, NC
Sacramento-Arden-Arcade-Truckee, CA-NV
San Jose-San Francisco-Oakland, CA
Seattle-Tacoma-Olympia, WA
Washington-Baltimore-Northern Virginia, DC-MD-VA-WV

Selected Metropolitan Statistical Areas
Albany-Schenectady-Troy, NY
Albuquerque, NM
Allentown-Bethlehem-Easton, PA
Amarillo, TX
Atlantic City, NJ
Auburn-Opelika, AL
Austin-Round Rock, TX
Bangor, ME
Baton Rouge, LA
Billings, MT
Birmingham-Hoover, AL
Bloomington, IN
Bloomington-Normal, IL
Brownsville-Harlingen, TX
Cedar Rapids, IA
Charleston-North Charleston, SC
Charlotte-Gastonia-Concord, NC-SC

Selected Metropolitan Statistical Areas
Columbia, SC
Corpus Christi, TX
El Paso, TX
Elkhart-Goshen, IN
Fayetteville, NC
Fort Collins-Loveland, CO
Fort Walton Beach-Crestview-Destin, FL
Fresno, CA
Grand Rapids-Wyoming, MI
Great Falls, MT
Greensboro-High Point, NC
Greenville, SC
Hickory-Lenoir-Morganton, NC
Holland-Grand Haven, MI
Honolulu, HI
Iowa City, IA
Jackson, MS
Jacksonville, FL
Johnstown, PA
Kansas City, MO-KS
Kennewick-Richland-Pasco, WA
Knoxville, TN
Lafayette, LA
Las Vegas-Paradise, NV
Lincoln, NE
Little Rock-North Little Rock, AR
Madison, WI
Medford, OR

Selected Metropolitan Statistical Areas
Memphis, TN-MS-AR
Miami-Fort Lauderdale-Miami Beach, FL
Mobile, AL
Monroe, LA
Muskegon-North Shore, MI
Nashville-Davidson-Murfreesboro, TN
New Orleans-Metairie-Kenner, LA
Ocala, FL
Oklahoma City, OK
Omaha-Council Bluffs, NE-IA
Orlando, FL
Palm Bay-Melbourne-Titusville, FL
Phoenix-Mesa-Scottsdale, AZ
Portland-Vancouver-Beaverton, OR-WA
Providence-New Bedford-Fall River, RI-MA
Reading, PA
Reno-Sparks, NV
Richmond, VA
Roanoke, VA
Rochester, NY
Rockford, IL
Salem, OR
Salinas, CA
Salisbury, MD
Salt Lake City, UT
San Antonio, TX
San Diego-Carlsbad-San Marcos, CA
Sarasota-Bradenton-Venice, FL

Selected Metropolitan Statistical Areas
Sioux City, IA-NE-SD
Springfield, MA
Springfield, MO
St. Louis, MO-IL
State College, PA
Tallahassee, FL
Tampa-St. Petersburg-Clearwater, FL
Toledo, OH
Tucson, AZ
Tulsa, OK
Tuscaloosa, AL
Virginia Beach-Norfolk-Newport News, VA-NC
Visalia-Porterville, CA
Wausau, WI
Wilmington, NC
York-Hanover, PA
Youngstown-Warren-Boardman, OH-PA

Selected Micropolitan Statistical Areas
Brainerd, MN
Centralia, WA
Claremont, NH
Clarksburg, WV
Corning, NY
Emporia, KS
Kalispell, MT
Lancaster, SC
Logansport, IN

Selected Micropolitan Statistical Areas
Manitowoc, WI
Meadville, PA
Miami, OK
Mount Airy, NC
Murray, KS
Muskogee, OK
Nogales, AZ
Ottumwa, IA
Paducah, KY-IL
Palatka, FL
Quincy, IL-MO
Starkville, MS
Wooster, OH

Selected County Clusters
Atchison, Holt Counties, MO and Johnson, Nemaha, Otoe, Pawnee, Richardson Counties, NE
Baylor, Briscoe, Childress, Cottle, Dickens, Floyd, Foard, Hall, Hardeman, Haskell, Kent, King, Knox, Motley, Stonewall, Throckmorton Counties, TX
Bedford, Fulton, Juniata Counties, PA
Caledonia, Orleans Counties, VT
Carroll, Jo Davies Counties, IL and Lafayette County, WI
Claiborne, Franklin, Jefferson, Wilkinson Counties, MS
Esmeralda, Lyon, Mineral Counties, NV
Fannin, Gilmer, Lumpkin Counties, GA
Fayette, Lee Counties, TX
Ferry, Okanogan Counties, WA
Graham, Norton, Osborne, Phillips, Rooks, Smith Counties, KS
Lee, Norton City, Wise Counties, VA

Selected County Clusters

Sanilac County, MI

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