CODING GEOGRAPHIC AREAS ACROSS CENSUS YEARS: CREATING CONSISTENT DEFINITIONS OF METROPOLITAN AREAS

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ABSTRACT

This paper presents suggested matches for the geographical coding (geocoding) of metropolitan areas in the 1970, 1980, and 1990 Censuses. The Census Bureau used different definitions and taxonomies to describe the geography of metropolitan areas in these three Census years. As a result, the *geographical areas* referred to by the standard Census Bureau definitions differ among the three Census data sets. The geographic matching scheme explained in this paper attempts to maximize consistency over time for metropolitan areas in the U.S.

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I. Introduction

This paper presents suggested matches for the geographical coding (geocoding) of metropolitan areas for use with the public use microsamples (PUMS) of the 1970, 1980, and 1990 Censuses. The Census Bureau used different definitions and taxonomies to describe the geography of metropolitan areas in these three Census years. As a result, the *geographic areas* referred to by the standard Census Bureau definitions differ among the three Census data sets. The geographic matching scheme explained in this paper attempts to maximize consistency over time for metropolitan areas in the U.S.

These geocodings first appeared in two projects that used metropolitan areas as proxies for well-defined, independent labor markets. Building on the earlier work of Loeb described below, Jaeger (1995) constructed geographically consistent definitions of the 50 largest metropolitan areas between the 1980 and 1990 Censuses to examine the substitutability of immigrants and natives in different skill categories. He also examined the impact of immigration on the wages of native workers in those 50 metropolitan areas. Bound and Holzer (1996) examined the effect of labor demand shifts and population adjustments on economic outcomes of specific demographic groups during the 1980s. For this analysis, Loeb and Turner extended Jaeger's geocodings to cover the 132 metropolitan areas with 1990 populations in excess of 250,000. Prior to these studies, Loeb generated a 1970-80-90 match for an initial inquiry on local labor markets by Bound and Holzer.[1]

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[1] Loeb's work built on an earlier 1970-80 match of 52 metropolitan areas done by Marshall Cummings for work done by Bound and Holzer (1993) using the 1970 and 1980 Censuses.

The geographic coding available in the 1970 Census necessitates more limited, and less inclusive, definitions of the metropolitan areas. This results in a less-precise mapping than is possible between 1980 and 1990 alone. In this sense, the geographic coding of the PUMS data for the three Census years implies that the 1970/1980/1990 matching is cruder than the 1980/1990 matching. Since there are certainly many additional questions that might be addressed using these data, the purpose of this note is to provide a guide to how the metropolitan area mappings were made from which others may benefit.

Section II of the paper briefly summarizes the various terms and resources important in using data with metropolitan areas as the focal geographic unit. Section III provides a step-by-step explanation of the matching process between 1980 and 1990, with a summary of the imperfections in this process. Section IV discusses the matching of 1970, 1980 and 1990 metropolitan areas and explains why the changes in coding during that time inhibit the process of matching without the introduction of substantial mismatches across years.

II. Census Micro Data and the Classification of Metropolitan Areas

In 1990, the Census Bureau defines a Metropolitan Area (MA) as:

a large population nucleus, together with adjacent communities that have a high degree of economic and social integration with that nucleus...Each MA must contain either a place with a minimum population of 50,000 or a Census Bureau-defined urbanized area and a total MA population of at least 100,000 (75,000 in New England). An MA comprises one or more central counties (cities and towns in New England) that have close economic and social relationships with the central county. An outlying county must have a

specified level of commuting to the central counties and must meet certain standards regarding metropolitan character, such as population density, urban population, and population growth.

Using this concept as a starting point, our objective was to construct metropolitan areas that maximize geographic consistency across Census years. While this is a relatively straightforward task in principle, changes in federal definitions of metropolitan areas, as well as a change in the coding scheme to designate sub-areas comprising these metropolitan areas, complicate this process considerably.

One source of confusion and complication in many analyses discussing metropolitan areas is the distinction among a veritable "alphabet soup" of metropolitan designations. Various "types" of MAs, which are not necessarily mutually exclusive, and the Census years in which the terms applied include:

- **MSA (90)**: relatively freestanding and not closely associated with other MAs, typically surrounded by non-metropolitan areas; the title of an MSA contains the name of its largest city and up to two additional city names.

- **CMSA (90)**: a consolidated metropolitan area is an MA of more than 1 million people which may included one or more PMSAs (see below); this concept provides an umbrella classification for cities whose economies are closely tied.[2]

- **PMSA (90)**: a primary metropolitan statistical area defines a large urbanized county or cluster of counties that demonstrate very strong internal economic and social links within a CMSA

- **SMSA (80)**: An SMSA consists of one or more entire counties or county equivalents (in New England, towns and cities are the basic units).

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[2] For example, in 1980 New York City, Jersey City, and Newark were considered to be separate metropolitan areas. In 1990, all three -- along with a substantial portion of New Jersey, and several counties in New York State and Connecticut -- are considered to be part of the New York--New Jersey--Long Island CMSA.

Although counties are the primary political units in most states, other designations are used in states like Louisiana where parishes are the primary geographical division and in New England areas where cities and towns are often more meaningful designations.

MA designations are managed by the Federal Office of Management and Budget, following uniform standards. Unfortunately, since the SMSA to PMSA/CMSA/MSA mappings are not one-to-one, it is not possible to simply map from one scheme to the other; rather, it is necessary to examine the component parts of these metropolitan classifications to put the pieces together as consistently as possible.

For the 1990 Census microdata, the building blocks in creating metropolitan areas are the Public Use Microdata Areas (or PUMAs). PUMAs comprise population groups of at least 100,000 persons and are designated by five-digit numbers that are unique within states. While the Census Bureau records data at the more disaggregate levels of the block, the block area and the tract, the PUMA is the most disaggregate unit of analysis available to the researcher with the microdata records.[3] Depending on the population density of the specific area and the geographic range of the respective counties, PUMAs may define a subset (several Census tracts) of a single county (e.g., Westchester County in New York State comprises PUMAs 04401 through 04405 plus 04500) or, in less densely populated areas, the PUMA might consist of several counties, all with quite small populations (e.g., PUMA 03500 in New York State comprises Cortland, Tioga, and Tompkins Counties).

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[3] The Census Bureau does release aggregate or average data at more disaggregate units such as the tract.

For the 1980 Census microdata, the county group is the primary building block used in constructing the metropolitan area. While the county group serves the same functional purpose as the PUMA, the definitions are not entirely coincident with PUMAs. In general, county groups tend to comprise somewhat larger geographic areas than PUMAs, though this is not universally true. Thus, our objective is to "add up" county groups in 1980 and PUMAs in 1990 to produce consistent geographical definitions for each metropolitan area.

III. The Mechanics of the 1990 to 1980 match

The primary tools for matching 1980 and 1990 data are the geographical equivalency files for each year.[4] For matching 1990 and 1980 data, we focus on CMSA definitions where applicable, because CMSAs are likely to be better approximations of local labor markets than PMSAs. In total, we matched county groups and PUMAs for 132 MSAs, representing all metropolitan areas with populations larger than 250,000.

The steps to the matching process include:

1. *Match PUMAs to MSAs/CMSAs in the 1990 Census using the Geographical Equivalency file.*

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[4] The geographic equivalency file for the 5 percent PUMS can be found at
`ftp://ftp.psc.lsa.umich.edu/pub/census/pums/1980/5pct/equiv/` and

As a first step, we are able to eliminate those PUMAs composed of entirely non-metropolitan areas. Next, when PUMAs reflect a geographical area entirely within a CMSA/MSA the PUMA is allocated to the MSA. Cases in which the PUMA is split between (possibly multiple) metropolitan areas and/or non-metropolitan areas present more difficulty. In cases where the PUMA encompasses multiple metropolitan areas, it is assigned to a single metropolitan area based on geography and the relative populations of the different metropolitan areas within the PUMA. In other words, the PUMA is assigned to the MSA with a greatest share of the PUMA's population. For PUMAs including both a metropolitan and non-metropolitan areas, we assigned the entire PUMA to the metropolitan area. Thus, our definition of CMSAs and MSAs is slightly different from those defined by the Bureau of the Census and includes some non-metropolitan areas.

2. Match 1980 County Groups to 1990 MSA/CMSA Definitions.

Having redefined the CMSAs/MSAs based on information available in the 1990 PUMS file, we then match the 1980 county groups to those definitions. In most cases, we were able to match the geographies exactly or nearly exactly.

Table 1, which gives extracts from the 1980 and 1990 geographic equivalency files for the area around Little Rock, Arkansas, helps to illustrate this process more clearly. Looking at the 1990 equivalency extract, we see that Little Rock (CMSA 4400) appears in PUMA 1500 and PUMA 1600. All of PUMA 1500 is in Little Rock so this is immediately

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`ftp://ftp.psc.lsa.umich.edu/pub/census/pums/1990/5pct/equiv/`, for 1980 and 1990,

included in our definition of Little Rock. Only part of PUMA 1600 is in the CMSA definition of Little Rock. However, since the remainder of PUMA 1600 is not in any other metropolitan area, this PUMA is also included in our definition. We see from the extract that, while the Census definition included only Pulaski (119), Saline (125), Faulkner (045), and Lonoke (085) counties. Ours includes Monroe (095) and Prairie (117) counties as well.

Next look at the 1980 geographic equivalency file extract. We would like to select the county groups so as to match the counties in Little Rock between 1980 and 1990. County group 007 includes counties 045, 085, 095, and 117, all of which are in our definition of Little Rock. We therefore include county group 007 in our 1980 sample. Similarly county groups 008 and 009 include parts of county 119 so they are included as well. Finally, county group 010 has both county 125 and the balance of Pulaski County and so also is included in our 1980 definition. In this case we have a perfect match between the two years.

Table 2 presents the results of this matching process for the 132 MSAs with 1990 populations greater than 250,000. The first column gives the name of the metropolitan area and the second, the state number. Columns two and three give the 1980 county group numbers and the 1990 PUMA numbers that comprise our definition of the MA.

Table 3 describes each C/MSA match by its 1990 population based on the geographic areas included in our 1990 definition, the ratio of our definition to the Census Bureau definition (as a measure of the similarity of the Census Bureau definition and our

respectively.

definition), the ratio of the 1990 population based on our definition to the 1990 population based on the county group definition (as a measure of how well the 1980 and 1990 definitions match), and the percent of the C/MSA that is considered a metropolitan area in our 1990 definition. The matches are generally quite close, if not exact. Our definition contains somewhat larger populations than the Census Bureau's for some metropolitan areas.

SAS code which implements these matches is available at `http://www.nber.org/census-geocodes`.

III. Matching 1970, 1980, and 1990

The process for matching 1970, 1980 and 1990 metropolitan areas was similar to the one described above for the later two years. However, the geographic (county group) codes available in the 1970 Census allow for far less precision than in the later years. In most cases, the metropolitan area, as defined in 1970, is composed of one county group. Trying to expand this definition to include surrounding areas often entails including most of the remainder of the state. Moreover, the 1970 definitions of the metropolitan areas tend to be substantially smaller than in 1980 or 1990. The choice then becomes between too small a definition, which may leave out a substantial part of the area labor market, or too large a definition, which may defeat the purpose of using metropolitan areas instead of states as the unit of analysis. The situation is not so dark for all areas.

Table 4 presents the 1970-80-90 matches for 125 metropolitan areas that are identifiable in the 1970 PUMS data. The third column of this table gives the names of the counties included in the 1970 definition of each metropolitan area. The fourth column gives the names of other counties that were included in either our 1980 or 1990 definition. It is important to note that the 1980 and 1990 definitions presented here are *not* the same as those for the 1980-90 match since they are based closely on the 1970 Census definition, not the 1990 Census definition. Columns five and six give the county numbers and 1980 county populations. The three remaining columns give the 1970 county group numbers, the 1980 county group numbers, and the 1990 PUMA numbers to be included in the match. In most cases all these numbers are in bold text and should be included in the new definitions. In a few cases, plain text numbers are included. We do not include these in our match. However, the matches including and not including these plain text county groups or PUMAs were close enough that we provide them in the table so that the reader may decide his/her own preference for including or excluding these areas. The final line in the table for each metropolitan area describes the precision of the fit.

To see how this matching was accomplished, again consider Little Rock, Arkansas. In 1970, this metropolitan area was defined as Saline and Pulaski Counties alone. For the 1980 these counties correspond precisely to county groups 008, 009 and 010, while in 1990 they are both included in PUMA 1500. As is the case for the 1980-90 mapping, this is a perfect match. However, it also is a substantially more limited definition of Little Rock. As a second example, consider Miami, Florida. The 1970 definition includes only Dade County. In 1990 we can match Dade County exactly with PUMAs 03601, 03602, 03700,

03800, and 03901-03909. In 1980, on the other hand, in order to get all of Dade County we have to use county group 053, which includes Monroe County as well. Based on the 1980 population figures, we then have a perfect match between 1970 and 1990 but have 3.89% more people in our 1980 definition. From the plain text PUMAs we can also see that in order to match 1980 and 1990 more precisely we would have to include PUMA 02400 which would give us Collier County, as well, taking us further from the 1970 definition. We chose not to do this for our match. Overall, 63 of the 125 metropolitan areas are perfectly matched across the three years. The precision of the other matches varies considerably. The table indicates for which areas the match is not precise; those areas without notes match exactly.

IV. Conclusion

Matching the geographies of metropolitan areas is complicated by a lack of consistent definitions in the underlying data. Using the constituent geographic units – county groups in 1970 and 1980, and PUMAs in 1990, we propose two matches for use with PUMS data from the 1970, 1980, and 1990 Censuses. In the first, we provide a match between the 1980 and 1990 geographies, while in the second, we provide a less-precise match between the geographies in all three Census years. In this match we have attempted to maximize the *geographic* consistency of our definitions across years to facilitate the analysis of economic and social outcomes with the Census.

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Table 1: Extracts from Geographical Equivalency File, 1980 and 1990, Little Rock, AR

1980 Equivalency File

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-----------------------------------------------------------------------
STATE: 05     COUNTY GROUP: 007     SMSA: 0000    TOTAL POPULATION:    104902
TYPE OF AREA: NONMETROPOLITAN AREA

NAME                            POPULATION                 ST COU MCD  PL  SMSA
FAULKNER COUNTY                     46192                  05 045
LONOKE COUNTY                       34518                  05 085
MONROE COUNTY                       14052                  05 095
PRAIRIE COUNTY                      10140                  05 117
-----------------------------------------------------------------------
STATE: 05     COUNTY GROUP: 008     SMSA: 4400    TOTAL POPULATION:    158461
TYPE OF AREA: SMSA CENTRAL CITY

NAME                            POPULATION                 ST COU MCD  PL  SMSA
LITTLE ROCK CITY                   158461                  05 119 1195 4400
-----------------------------------------------------------------------
STATE: 05     COUNTY GROUP: 009     SMSA: 4400    TOTAL POPULATION:    102463
TYPE OF AREA: SMSA, CENTRAL CITY/REMAINDER NOT SEPARATELY IDENTIFIED

NAME                            POPULATION                 ST COU MCD  PL  SMSA
JACKSONVILLE CITY                   27589                  05 119 1045 4400
NORTH LITTLE ROCK CITY              64288                  05 119 1475 4400
SHERWOOD CITY                       10586                  05 119 1825 4400
-----------------------------------------------------------------------
STATE: 05     COUNTY GROUP: 010     SMSA: 4400    TOTAL POPULATION:    132850
TYPE OF AREA: SMSA, EXCLUDING CENTRAL CITY

NAME                            POPULATION                 ST COU MCD  PL  SMSA
PULASKI COUNTY                      79689 (BALANCE)        05 119      4400
SALINE COUNTY                       53161                  05 125      4400
-----------------------------------------------------------------------
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1990 Equivalency File

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----------------------------------------------------------------------
 STATE: 05    PUMA: 01500    MSA/PMSA: 4400
 TYPE OF AREA: COUNTIES/INDEPENDENT CITIES (2 OR MORE)

 NAME                        POPULATION  ST  COU  MCD  PLACE  TRACT  MSA/PMSA
 Pulaski County                 349660   05  119       4400
 Saline County                   64183   05  125       4400

 TOTAL POPULATION:      413843
----------------------------------------------------------------------
 STATE: 05    PUMA: 01600    MSA/PMSA: 9997
 TYPE OF AREA: COUNTIES/INDEPENDENT CITIES (2 OR MORE)

 NAME                        POPULATION  ST  COU  MCD  PLACE  TRACT  MSA/PMSA
 Faulkner County                 60006   05  045       4400
 Lonoke County                   39268   05  085       4400
 Monroe County                   11333   05  095       9999
 Prairie County                   9518   05  117       9999

 TOTAL POPULATION:      120125
----------------------------------------------------------------------
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Table 2: 1980 -1990 Matches Based on
1990 MSA/CMSA Definitions

MSA	C/MSA Name	1980 State Num.	1980 County Group	1990 PUMA
0160	Albany-Schenectady-Troy, NY	36	5-9	800-1200
		36	33	3800
0200	Albuquerque, NM	35	4-5	201-204
0240	Allentown-Bethlehem, PA-NJ	42	51-54	2001-2102
0460	Appleton-Oshkosh-Neenah, WI	55	5-6	400-500
0520	Atlanta, GA	13	4-10	800
		13	12	1500-2103
		13	27	2300
		13		3000
0560	Atlantic City, NJ	34	38	100-200
0600	Augusta, GA-SC	13	25-26	500
		13		2200
		45	16	1800
0640	Austin, TX	48	44-45	4901-5200
		48	66	
0680	Bakersfield, CA	6	36-37	4900-5002
0720	Baltimore, MD	24	4-8	201-306
		24	12	500-600
		24		1000-1100
		24		1501-1504
0760	Baton Rouge, LA	22	14-17	1200-1500
0840	Beaumont-Port Arthur, TX	48	54-56	5900-6100
0960	Binghampton, NY	36	17	3500-3602
		36	29-30	
1000	Birmingham, AL	1	9-11	1700-1806
1123	Boston-Lawernce-Salem-Lowell-Brockton, MA	25	11-33	1400-3800
		33	3	501
		33		503
1240	Brownsville-Harlingen, TX	48	38	4201-4202

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
1282	Buffalo-Niagara Falls, NY (C)	36	23-25	2301-2302
		36		2500-3003
1320	Canton, OH	39	27-28	5001-5003
1440	Charleston, SC	45	19-21	1100-1202
1480	Charleston, WV	54	8-9	700
1520	Charlotte-Gastonia-Rock Hill NC-SC	37	36-40	801-1200
		45	6	500
1560	Chattanooga, TN-GA	13	1	300
		47	15-17	1000-1300
1602	Chicago-Gary-Lake County, IL-IN-WI (C)	17	32-38	3001-3502
		18	1-4	800-1000
		18		1200
		18		3700-3900
		55	21	2000
1642	Cincinnati-Hamilton, OH-KY-IN (C)	18	36	400
		21	1-2	1300-1400
		39	51-55	3000
		39		3300
		39		5301-5406
1692	Cleveland-Akron-Lorain, OH (C)	39	6-18	400
		39	23-25	800-900
		39		3700-4704
1720	Colorado Springs, CO	8	14	1000-1100
1760	Columbia, SC	45	13-15	1601-1700
1840	Columbus, OH	39	41-44	1700
		39	56	2300
		39		2700-2800
		39		5101-5107
1880	Corpus Christi, TX	48	35	4000
		48	39	4301-4302
		48		4800

Table 2, continued

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
1922	Dallas-Fort Worth, TX (C)	48	13-25	1500
		48		1800-2904
1960	Davenport-Rock Island-Moline, IA-IL	17	7	600
		17	10-11	1000
		19	16	1400
2000	Dayton-Springfield, OH	39	45-50	2100-2200
		39		2600
		39		5201-5205
2020	Daytona Beach, FL	12	14-15	900
2082	Denver-Boulder, CO (C)	8	6-12	101-702
2120	Des Moines, IA	19	8-11	700-1000
2162	Detroit-Ann Arbor, MI (C)	26	24	2200
		26	33-59	3000-4400
2320	El Paso, TX	48	32	3701-3705
2360	Erie, PA	42	1-2	101-102
2400	Eugene-Springfield, OR	41	9-10	700-800
2440	Evansville, IN-KY	18	31-33	500
		18		2400
2560	Fayetteville, NC	37	32-33	3000-3100
2640	Flint, MI	26	21-23	2000-2102
2700	Fort Myers-Cape Coral FL	12	31	3001-3003
2710	Fort Pierce, FL	12	30	2700-2800
2760	Fort Wayne, IN	18	9-12	1700-1800
		18		2600-2700
2840	Fresno, CA	6	27-28	4000-4100
3000	Grand Rapids MI	26	13-15	1300-1700
		26	17	
3120	Greensboro-Winston-Salem-High Point, NC	37	7-13	1300-1700
		37		2000-2200
3160	Greenville-Spartanburg, SC	45	2-5	100-302
3240	Harrisburg-Lebanon-Carlisle, PA	42	41-45	2200
		42		3601-3700

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
3283	Hartford-New Britain-Middletown-Bristol CT	9	11	200-1000
		9	14-21	2500
3320	Honolulu, HI	15	1-2	301-307
3362	Houston-Galveston-Brazoria, TX (C)	48	50-51	5500-5600
		48	57-64	6200-6908
		48		7200
3400	Huntington-Ashland, WV-KY-OH	21	11	1100
		39	59	3500
		54	10-11	800
3480	Indianapolis, IN	18	21-24	101-107
		18		3300-3500
3560	Jackson, MS	28	8-10	800-1000
3600	Jacksonville, FL	12	7-9	200
		12		1000-1100
3660	Johnson City-Kingsport-Bristol, TN-VA	47	25-27	100-300
		51	9-10	200
		51		3200
3760	Kansas City MO-KS	20	9-11	901-1100
		29	7-12	700-1005
3810	Killeen-Temple, TX	48	46-47	5300-5400
3840	Knoxville, TN	47	21-24	600-900
3980	Lakeland-Winter Haven FL	12	20	4600
4000	Lancaster, PA	42	46-48	3501-3503
4040	Lansing-East Lansing MI	26	18	1700-1900
		26	20	
4120	Las Vegas NV	32	1-2	201-205
4280	Lexington-Fayette, KY	21	6-8	1600-1802
4400	Little Rock-North Little Rock, AR	5	7-10	1500-1600
4472	Los Angeles-Anaheim-Riverside, CA (C)	6	38-50	3700
		6		4200-4808
		6		5200-7207
4520	Louisville, KY-IN	18	34-35	200-300
		21	3-5	1900-2103
4680	Macon-Warner Robins, GA	13	13-14	400
		13		3100

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
4720	Madison, WI	55	17-18	1600-1700
4880	McAllen-Edinburg-Mission, TX	48	36-37	4101-4103
4900	Melbourne-Titusville-Palm Bay, FL	12	16	1200-1400
4920	Memphis, TN-AR-MS	5	5	600
		28	1	100
		47	1-3	1800-2000
4992	Miami-Fort Lauderdale, FL (C)	12	36-53	3200-3909
5082	Milwaukee-Racine, WI (C)	55	22-26	2100-2400
5122	Minneapolis-St.Cloud MN-WI (C)	27	14-25	900
		27		1100-2400
		55	12	1100
5160	Mobile, AL	1	19-21	700-800
5170	Modesto, CA	6	22-23	2400-2500
5240	Montgomery, AL	1	17	1300
		1		1500
5360	Nashville, TN	47	8-11	501-505
		47		2300-2500
5480	New Haven-Meriden CT	9	7-10	2000-2200
		9		2400
5520	New London-Norwich, CT-RI	9	12-13	2600-2700
5560	New Orleans LA	22	19	1700
		22	21-26	1901-2300
5602	N.Y.-North. N.J.-Long Island, NY-NJ-CT (C)	9	1-6	1100-1700
		9	24	2300
		34	1-37	400-4400
		34	51-52	
		36	34-44	2401-2412
		36		4000-5414
5720	Norfolk-Virginia Beach-Newport News VA	51	16-21	2300
		51	26	2500-3100
		51		3300
5880	Oklahoma City, OK	40	10-13	900-1100

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
5920	Omaha, NE-IA	19	19	1700
		31	6-7	900-1004
5960	Orlando, FL	12	17-19	1600-2300
6080	Pensacola, FL	12	1	100
6120	Peoria, IL	17	8-9	700-900
6162	Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD (C)	10	1	301-304
		34	39-50	300
		34		4500-5600
		42	55-72	2601-3003
6200	Phoenix, AZ	4	8-9	101-116
6282	Pittsburgh-Beaver Valley PA (C)	42	22-34	1301-1400
		42		3301-3303
		42		3800-3902
6442	Portland-Vancouver, OR-WA (C)	41	2-7	1000-1500
		53	10	1901-1902
6483	Providence-Pawtucket-Woonsocket, RI-MA	25	34-35	4000
		25		4200
		44	1-7	100-800
6520	Provo-Orem, UT	49	6	500
6640	Raleigh-Durham, NC	37	15-19	2301-2500
		37		2700
6680	Reading, PA	42	49-50	3101-3102
6720	Reno, NV	32	3-4	100
		32		300-400
6760	Richmond-Petersburg, VA	51	22-25	1800-2100
		51		2400
6840	Rochester, NY	36	19-22	1900-2200
6880	Rockford, IL	17	2-3	300-400
6920	Sacramento, CA	6	7-11	700
		6		1000-1200
		6		2801-2906
6960	Saginaw-Bay City-Midland, MI	26	8-9	800-900
		26	11	1100
7040	St. Louis, MO-IL	17	18-22	1700-2100
		29	22-26	1101-1500

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
7120	Salinas-Seaside-Monterey, CA	6	33	3800-3902
7160	Salt City-Ogden, UT	49	1-5	100-400
7240	San Antonio, TX	48	40-42	4401-4600
7320	San Diego CA	6	51-52	3301-3313
7362	San Francisco-Oakland-San Jose, CA (C)	6	12-19	900
		6	30-32	1300-2206
		6		3401-3411
		6		3600
7480	Santa Barbara-Santa Maria-Lompoc, CA	6	35	3201-3202
7510	Sarasota, FL	12	28	3101-3102
7560	Scranton-Wilkes-Barre, PA	42	7-8	500-700
		42	10-15	1800
		42		3200
7602	Seattle-Tacoma, WA (C)	53	13-14	1001-1004
		53	17-19	1301-1304
		53		1701-1808
7680	Shreveport, LA	22	1-2	100
7840	Spokane, WA	53	5	500-600
8000	Springfield, MA	25	2-6	200-700
8120	Stockton, CA	6	20-21	2301-2304
8160	Syracuse, NY	36	13-16	400
		36		1400-1700
8280	Tampa-St. Petersburg-Clearwater, FL	12	11	4000
		12	21-26	4200-4500
8400	Toledo, OH	39	1-4	100-200
		39		3601-3604
8520	Tucson, AZ	4	5-6	201-205
8560	Tulsa, OK	40	4-7	100
		40		600-700
8680	Utica-Rome, NY	36	10-12	501-600
8780	Visalia-Tulare-Porterville, CA	6	26	3500

MSA	C/MSA Name	State Num.	1980 County Group	1990 PUMA
8840	Washington, DC-MD-VA	11	1	101-105
		24	3	400
		24	9-11	700
		24		900
		24		1201-1307
		51	27-31	800-1100
		51		2200
8960	West Palm Beach-Boca Raton-Delray FL	12	33-35	2901-2906
9040	Wichita, KS	20	4-6	400-600
9240	Worcester, MA	25	7-9	800-1100
9280	York PA	42	38-40	2300
		42		2501-2503
9320	Youngstown-Warren, OH	39	19-22	4801-4802
		39		4901-4902

NOTES: (C) indicates 1990 CMSA.

Table 3: Population and Relative Population of Metropolitan Areas Using 1980 and 1990 Definitions

C/MSA	C/MSA Name	Population 1990 Definition	90 Def./ Cen.Bur. Def.	90 Def./ 80 Def.	1990 Metro. Share
0160	Albany-Schenectady-Troy, NY	885,305	1.01	1.00	0.93
0200	Albuquerque, NM	480,577	1.00	1.00	1.00
0240	Allentown-Bethlehem, PA-NJ	785,324	1.14	1.00	1.00
0460	Appleton-Oshkosh-Neenah, WI	315,121	1.00	1.00	1.00
0520	Atlanta, GA	2,908,797	1.03	1.00	0.91
0560	Atlantic City, NJ	224,327	0.70	1.00	1.00
0600	Augusta, GA-SC	505,820	1.28	1.00	0.78
0640	Austin, TX	902,122	1.15	1.00	0.87
0680	Bakersfield, CA	543,477	1.00	1.00	1.00
0720	Baltimore, MD	2,528,944	1.06	1.00	0.97
0760	Baton Rouge, LA	622,666	1.18	1.00	0.85
0840	Beaumont-Port Arthur, TX	361,226	1.00	1.00	1.00
0960	Binghampton, NY	407,557	1.54	1.00	0.65
1000	Birmingham, AL	800,892	0.88	1.00	1.00
1123	Boston-Lawrence-Salem-Lowell-Brockton, MA	3,966,688	0.95	0.97	0.99
1240	Brownsville-Harlingen, TX	260,120	1.00	1.00	1.00
1282	Buffalo-Niagara Falls, NY(C)	1,189,288	1.00	1.00	1.00
1320	Canton, OH	367,585	0.93	1.00	1.00
1440	Charleston, SC	506,875	1.00	1.00	1.00
1480	Charleston, WV	286,307	1.14	1.00	0.88
1520	Charlotte-Gastonia-Rock Hill NC-SC	1,306,789	1.13	1.00	0.89
1560	Chattanooga, TN-GA	502,261	1.16	1.00	0.86
1602	Chicago-Gary-Lake County, IL-IN-WI (C)	8,026,220	1.00	1.00	1.00
1642	Cincinnati-Hamilton, OH-KY-IN (C)	1,863,083	1.07	1.00	0.94
1692	Cleveland-Akron-Lorain, OH (C)	2,859,644	1.04	1.00	0.97
1720	Colorado Springs, CO	397,014	1.00	1.00	1.00
1760	Columbia, SC	453,331	1.00	1.00	1.00
1840	Columbus, OH	1,446,749	1.05	1.02	0.95
1880	Corpus Christi, TX	518,510	1.48	1.00	0.68
1922	Dallas-Fort Worth, TX (C)	3,949,073	1.02	1.00	0.98
1960	Davenport-Rock Island-Moline, IA-IL	373,881	1.07	0.95	0.86
2000	Dayton-Springfield, OH	1,045,002	1.10	0.98	0.91
2020	Daytona Beach, FL	370,712	1.00	1.00	1.00
2082	Denver-Boulder, CO (C)	1,787,928	0.97	1.00	1.00
2120	Des Moines, IA	569,645	1.45	1.00	0.69
2162	Detroit-Ann Arbor, MI (C)	4,735,006	1.02	1.00	0.99
2320	El Paso, TX	591,610	1.00	1.00	1.00

Table 3, continued

C/MSA	C/MSA Name	Population 1990 Definition	90 Def./ Cen.Bur. Def.	90 Def./ 80 Def.	1990 Metro. Share
2360	Erie, PA	275,572	1.00	1.00	1.00
2400	Eugene-Springfield, OR	282,912	1.00	1.00	1.00
2440	Evansville, IN-KY	355,581	1.28	1.00	0.66
2560	Fayetteville, NC	274,566	1.00	1.00	1.00
2640	Flint, MI	430,459	1.00	1.00	1.00
2700	Fort Myers-Cape Coral FL	335,113	1.00	1.00	1.00
2710	Fort Pierce, FL	370,906	1.48	0.92	1.00
2760	Fort Wayne, IN	551,081	1.52	1.00	0.66
2840	Fresno, CA	667,490	1.00	1.00	1.00
3000	Grand Rapids MI	688,399	1.00	1.00	1.00
3120	Greensboro-Winston-Salem-High Point, NC	1,112,008	1.06	1.00	0.95
3160	Greenville-Spartanburg, SC	698,355	1.09	1.00	0.92
3240	Harrisburg-Lebanon-Carlisle, PA	587,986	1.00	1.00	1.00
3283	Hartford-New Britain-Middletown-Bristol CT	1,226,203	1.13	0.97	0.88
3320	Honolulu, HI	836,231	1.00	1.00	1.00
3362	Houston-Galveston-Brazoria, TX (C)	4,050,816	1.06	1.01	0.95
3400	Huntington-Ashland, WV-KY-OH	517,497	1.66	0.94	0.60
3480	Indianapolis, IN	1,249,822	1.00	1.00	1.00
3560	Jackson, MS	520,327	1.32	1.00	0.76
3600	Jacksonville, FL	1,018,984	1.12	1.00	0.89
3660	Johnson City-Kingsport-Bristol, TN-VA	712,233	1.63	1.00	0.61
3760	Kansas City MO-KS	1,722,403	1.10	1.00	0.90
3810	Killeen-Temple, TX	382,142	1.50	1.00	0.67
3840	Knoxville, TN	604,816	1.00	1.10	1.00
3980	Lakeland-Winter Haven FL	405,382	1.00	1.00	1.00
4000	Lancaster, PA	422,822	1.00	1.00	1.00
4040	Lansing-East Lansing MI	432,674	1.00	1.00	1.00
4120	Las Vegas NV	741,459	1.00	1.00	1.00
4280	Lexington-Fayette, KY	460,587	1.32	1.00	0.76
4400	Little Rock-North Little Rock, AR	533,968	1.04	1.00	0.96
4472	Los Angeles-Anaheim-Riverside, CA (C)	14,640,832	1.01	1.00	0.99
4520	Louisville, KY-IN	1,051,407	1.10	0.97	0.91
4680	Macon-Warner Robins, GA	317,013	1.13	1.00	0.89
4720	Madison, WI	367,085	1.00	1.00	1.00
4880	McAllen-Edinburg-Mission, TX	383,545	1.00	1.00	1.00
4900	Melbourne-Titusville-Palm Bay, FL	398,978	1.00	1.00	1.00
4920	Memphis, TN-AR-MS	1,224,716	1.25	1.00	0.80
4992	Miami-Fort Lauderdale, FL (C)	3,192,582	1.00	1.02	1.00
5082	Milwaukee-Racine, WI (C)	1,607,183	1.00	1.00	1.00

Table 3, continued

C/MSA	C/MSA Name	Population			
		1990 Definition	90 Def./ Cen.Bur. Def.	90 Def./ 80 Def.	1990 Metro. Share
5122	Minneapolis-St.Cloud MN-WI	2,679,333	1.09	1.00	0.95
5160	Mobile, AL	512,441	1.07	1.00	0.93
5170	Modesto, CA	370,522	1.00	1.00	1.00
5240	Montgomery, AL	324,975	1.11	0.90	0.90
5360	Nashville, TN	985,026	1.00	1.00	1.00
5480	New Haven-Meriden CT	586,826	1.11	1.00	1.00
5520	New London-Norwich, CT-RI	254,957	0.96	1.00	0.96
5560	New Orleans LA	1,308,023	1.06	1.00	0.95
5602	N.Y.-North. N.J.-Long Island, NY-NJ-CT (C)	18,306,094	1.00	1.00	1.00
5720	Norfolk-Virginia Beach-Newport News VA	1,578,403	1.13	0.97	0.89
5880	Oklahoma City, OK	877,284	0.92	1.06	1.00
5920	Omaha, NE-IA	711,724	1.15	1.00	0.87
5960	Orlando, FL	1,072,748	1.00	1.00	1.00
6080	Pensacola, FL	344,406	1.00	1.00	1.00
6120	Peoria, IL	306,519	0.90	1.00	0.82
6162	Philadelphia-Wilmington-Trenton, PA-NJ-DE-MD	5,923,087	1.00	1.00	1.00
6200	Phoenix, AZ	2,122,101	1.00	1.00	1.00
6282	Pittsburgh-Beaver Valley PA (C)	2,378,594	1.06	1.00	0.94
6442	Portland-Vancouver, OR-WA (C)	1,755,919	1.00	1.00	1.00
6483	Providence-Pawtucket-Woonsocket, RI	1,237,795	1.08	1.03	0.94
6520	Provo-Orem, UT	263,590	1.00	1.00	1.00
6640	Raleigh-Durham, NC	898,921	1.22	1.00	0.82
6680	Reading, PA	336,523	1.00	1.00	1.00
6720	Reno, NV	345,274	1.36	1.00	0.55
6760	Richmond-Petersburg, VA	896,192	1.04	0.97	0.97
6840	Rochester, NY	1,104,977	1.10	1.02	0.91
6880	Rockford, IL	283,719	1.00	0.89	1.00
6920	Sacramento, CA	1,582,669	1.07	0.99	0.94
6960	Saginaw-Bay City-Midland, MI	529,096	1.33	0.86	0.76
7040	St. Louis, MO-IL	2,598,584	1.06	1.01	0.93
7120	Salinas-Seaside-Monterey, CA	355,660	1.00	1.00	1.00
7160	Salt City-Ogden, UT	1,212,749	1.13	1.00	0.88
7240	San Antonio, TX	1,337,204	1.03	1.00	0.97
7320	San Diego CA	2,498,016	1.00	1.00	1.00
7362	San Francisco-Oakland-San Jose, CA	6,253,311	1.00	1.00	1.00
7480	Santa Barbara-Santa Maria-Lompoc, CA	369,608	1.00	1.00	1.00
7510	Sarasota, FL	277,776	1.00	1.00	1.00
7560	Scranton-Wilkes-Barre, PA	1,122,014	1.53	1.00	0.71
7602	Seattle-Tacoma, WA (C)	2,559,164	1.00	1.00	1.00

Table 3, continued

C/MSA	C/MSA Name	Population 1990 Definition	90 Def./ Cen.Bur. Def.	90 Def./ 80 Def.	1990 Metro. Share
7680	Shreveport, LA	334,341	1.00	1.00	1.00
7840	Spokane, WA	361,364	1.00	1.00	1.00
8000	Springfield, MA	672,970	1.27	1.00	0.79
8120	Stockton, CA	480,628	1.00	1.00	1.00
8160	Syracuse, NY	711,632	1.08	1.00	0.93
8280	Tampa-St. Petersburg-Clearwater, FL	2,218,974	1.07	1.00	0.93
8400	Toledo, OH	680,192	1.11	1.09	0.90
8520	Tucson, AZ	666,874	1.00	1.00	1.00
8560	Tulsa, OK	811,126	1.14	1.04	0.80
8680	Utica-Rome, NY	370,824	1.17	1.00	0.85
8780	Visalia-Tulare-Porterville, CA	311,921	1.00	1.00	1.00
8840	Washington, DC-MD-VA	4,108,722	1.05	1.00	0.96
8960	West Palm Beach-Boca Raton-Delray FL	863,518	1.00	1.00	1.00
9040	Wichita, KS	684,188	1.41	1.00	0.71
9240	Worcester, MA	482,436	1.10	1.00	0.92
9280	York, PA	538,930	1.29	1.00	0.78
9320	Youngstown-Warren, OH	492,619	1.00	1.00	1.00

NOTES: See text for description of column headings.

Table 4: 1970-1980-1990 Matches Based on 1970 MSA Definitions

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Alabama						
1 Birmingham	Jefferson	01:073	617,324	**4101**	**009, 010**	**01801-01806**
	Walker	01:127	68,660	**4101**	**008**	**00200**
	Shelby	01:117	66,298	**4101**	**011**	**01700**
	St Clair	01:115	41,205		**011**	**01700**
	Blount	01:009	36,459		**008**	
	Franklin*	01:059	28,350			**00200**
	Winston*	01:133	21,953			**00200**

*these two counties are included with 3 other counties in 1980
No Match: 1980 has 10.32% more than 1970 and 1990 has 12.16% more than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
2 Mobile	Mobile	01:097	364,980	**12201**	**019, 020**	**00700**
	Baldwin	01:003	78,556	**12201**	**021**	**00800**
	Escambia	01:053	38,440		**021**	**00800**

1980 and 1990 match with 8.67% more than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Arkansas						
3 Little Rock	Saline	05:125	53,161	**10401**	**010**	**01500**
N. Little Rock	Pulaski	05:119	340,613	**10401**	**008, 009, 010**	**01500**
Arizona						
4 Phoenix	Maricopa	04:013	1,509,052	**14101**	**008, 009**	**00101-00116**
5 Tuscon	Pima	04:019	513,443	**14102**	**005, 006**	**00201-00205**
California						
6 Anaheim Santa Ana Garden Grove	Orange	06:059	1,932,709	**14302**	**043, 044, 045, 046**	**04200, 04300, 04400, 04500, 04600, 04700, 04801-04808**
7 Bakersfield	Kern	06:029	403,089	**14303**	**036, 037**	**04900, 05001-05002**
8 Fresno	Fresno	06:019	514,621	**14304**	**027, 028**	**04000,04100**
9 Los Angeles Long Beach	Los Angeles	06:037	7,477,503	**14301**	**040, 041, 042**	**05200, 05300, 05400, 05500,05600, 05700, 05800, 05900, 06000, 06100 06200, 06300, 06401-06424, 06501-06521, 06600**
10 Oxnard Ventura	Ventura	06:111	529,174	**14305**	**038, 039**	**06701-06705**
11 Sacramento	Yolo	06:113	113,374	**14501**	**011**	**01000**
	Sacramento	06:067	783,381	**14501**	**008, 009**	**02801, 02802, 02803 02901-02906**
	Placer	06:061	117,247	**14501**	**010**	**01100**

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Calfornia, continued						
12 Salinas Monterey	Monterey	06:053	290,444	**14701**	**033**	**03800, 03901-03902**
13 San Bernardino Riverside Ontario	Riverside San Bernardino	06:065 06:071	663,166 895,016	**14306 14307**	**049, 050* 047, 048**	**06800, 06901-06905 07000, 07100 07201-07207**
	Imperial		92,110		**050**	

*492,290 of Riverside is in county group 050.
1970 and 1990 match, 1980 has 5.91% more

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
14 San Diego	San Diego	06:073	1,861,846	**14201**	**051, 052**	**03301-03313**
15 San Francisco Oakland	San Francisco Alameda Contra Costa Marin San Mateo	06:075 06:001 06:013 06:041 06:081	678,974 1,105,379 656,380 222,568 587,329	**14704 14702 14703 14703 14705**	**014 016, 017 018 019 015**	**01901-01906 02000, 02101-02109 01700, 01801-01805 01501-01502 02201-02206**
16 San Jose	Santa Clara	06:085	1,295,071	**14706**	**030, 031**	**03401-03411**
17 Santa Barbara	Santa Barbara	06:083	298,694	**14308**	**035**	**03201-03202**
18 Stockton	San Joaquin	06:077	347,342	**14401**	**020, 021**	**02301-02304**
Colorado						
19 Denver	Adams Arapahoe Boulder Jefferson Denver	08:001 08:005 08:013 08:059 08:031	245,944 293,621 189,625 371,753 492,365	**13101 13101 13102 13102 13103**	**007 008, 009 010 011, 012 006**	**00201, 00301-00302 00201-00202, 00400 00701-00702 00500, 00601-00602 00101-00104**
Connecticut						
20 Bridgeport	Fairfield	09:001	702,578	**1311**	**001, 002, 003, 004, 005, 006**	**01100, 01200, 01300, 01400, 01500, 01600, 01700**
	New Haven (part) Litchfield (part)	09:009 09:005	44,819 1,654		**006**	**01200**

No match, 1980 has 6.38% more than 1970, 1990 has 0.24% more than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
21 Hartford	Hartford	09:003	806,350	**501**	**015, 016, 017, 018, 019, 020, 021**	**00200, 00300, 00400, 00500 00600, 00700, 00800**
	Tolland (part) Tolland (part) Litchfield (part)	09:013 09:013 09:005	27,974* 39,426* 10,732*		**018 019 021**	

*county group 018 has 119,522 of county 003, county group 019 has 80,693 of county 003, and county group 021 has 99,909 of county 003
1970 and 1990 match, 1980 has 9.69% more

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
22 New Haven	New Haven	09:009	559,232	**503**	**006*, 007, 008, 009, 010**	**01800, 01900, 02000, 02100, 02200, 02300, 02400**
	Fairfield	09:001	81,855		**006**	

*44,819 of county 009 is in county group 006.
1970 and 1990 match, 1980 has 8.01% less

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Delaware						
23 Wilmington	Cecil, MD	24:015	60,430	**1411**	24:012	24:00500
	New Castle, DE	10:003	398,115	**1411**	**10:001**	**10:00301-00304**
	Salem, NJ	34:033	64,676	**1411**	34:039	34:00300
	Caroline, MD	24:011	23,143		24:012	24:00500
	Kent	24:029	16,695		24:012	24:00500
	Queen Anne's	24:035	25,508		24:012	24:00500
	Talbot	24:041	25,604		24:012	24:00500
	Cape May, NJ	34:009	82,266		34:039	34:00300
1980 and 1990 match with 23.91% less than 1970						
District of Columbia						
24 Washington, DC	DC	11:001	638,333	**1604**	**11:001**	**00101-00105**
	Montgomery, MD	24:031	579,053	**1605**	**24:009**	**01201-01206**
	Prince George,s, MD	24:033	665,071	**1606**	**24:010**	**01301-01307**
	Alexandia City, VA	51:510	103,217	**1607**	**51:030**	**01000**
	Arlington, VA	51:013	152,599	**1607**	**51:029**	**00800**
	Fairfax City, VA	51:600	19,390	**1608**	**51:031**	**01100**
	Falls Church City, VA	51:610	9,515	**1608**	**51:031**	**01100**
	Fairfax, VA	51:059	596,901	**1608**	**51:031**	**01100**
	Laudon, VA	51:107	57,427	**1608**	**51:028**	**00900**
	Prince William, VA	51:153	144,703	**1608**	**51:028**	**00900**
	Manassas City, VA	51:683	15,438	*	**51:028**	**00900**
	Manasses Park City, VA	51:685	6,524	*	**51:028**	**00900**

*these two counties may be included in the 1970 county groups here. they do not appear individually on the 1970 map.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Florida						
25 Fort Lauderdale Hollywood	Broward	12:011	1,018,200	**3301**	**036, 037, 038, 039, 040, 041, 042**	**03200, 03300, 03400 03501-03506**
26 Jacksonville	Duval	12:031	571,003	**3101**	**007**	**01000**
27 Miami	Dade	12:025	1,625,802	**3302**	**043, 044, 045, 046, 047, 048, 049, 050, 051, 052, 053***	**03601-03602, 370003800 03901-03909**
	Monroe	12:087	63,188		**053***	02400
	Collier	12:021	85,971			02400
*county group 053 contains 149,677 of county 025.						
1970 and 1990 match. 1980 has 3.89% more						
28 Orlando	Seminole	12:117	179,752	**3201**	**019**	**02200, 02300**
	Orange	12:095	471,016	**3201**	**017, 018**	**01600, 01700, 01800 01900, 02000**
	Osceola	12:097	49,287	3202	**019**	02100
	Brevard	12:009	272,959	3202		
1970 and 1990 match. 1980 has 7.57% more						
29 Tampa	Hillsborough	12:057	646,960	**3303**	**022, 023**	**04500**
St. Petersburg	Pinellas	12:103	728,531	**3304**	**024, 025, 026**	**04400**
30 West Palm Beach	Palm Beach	12:099	576,863	**3305**	**033, 034, 035**	**02901-02906**

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Georgia						
31 Atlanta	Dekalb	13:089	483,024	**4001**	**004, 006**	**01901-01904**
	Fulton	13:121	589,904	**4002**	**004, 005**	**02001-02005**
	Clayton	13:063	150,357	**4003**	**009**	**01700**
	Cobb	13:067	297,718	**4003**	**007**	**01801-01803**
	Gwinnett	13:135	166,903	**4003**	**008**	**02101-02103**
	Douglas	13:097	54,573		**007**	01500
	Rockdale	13:247	36,747		**008**	01600
	Henry	13:151	36,309			01600
	Fayette	13:113	29,043			01500
1970 and 1990 match. 1980 has 5.41% more						
32 Augusta	Aiken, SC	45:003	105,625	**2901**	**45:016**	**45:01800**
	Richmond, GA	13:245	181,629	**2901**	**13:026**	**13:00500**
	Columbia,GA	13:073	40,114			**13:00500**
	McDuffie, GA	13:189	18,546			**1300500**
1970 and 1980 match. 1990 has 20.42% more						
Hawaii						
33 Honolulu	Honolulu	15:003	762,565	**14901** **14902**	**001, 002**	**00301-00307**
	Kauii	15:007	39,082	**14902**	**003**	**00200**
	Mauii	15:009	70,847	**14902**	**003**	**00200**
	Hawaii	15:001	92,053	**14902**	**003**	**00100**
	Kalawao	15:005	144		**003**	**00200**
1980 and 1990 match with 0.01% more than 1970						
Iowa						
34 Davenport, IA	Henry, IL	17:073	57,968	**7401**	17:010	00600
Rock Island, Ill	Rock Island, IL	17:161	165,968	**7401**	**17:011**	**01000**
Moline, Ill	Scott, IA	19:163	160,022	**7401**	**19:016**	**01400**
	Knox, IL	17:095	61,607		17:010	
	Mercer, IL	17:131	19,286			17:00600
	Putnam, IL	17:155	6,085			17:00600
	Bureau, IL	17:011	39,114			17:00600
1980 and 1990 match with 15.10% less than 1970						
35 Des Moines	Polk	19:153	303,170	**9301**	**008, 009**	**00700, 00800**
Illinois						
36 Chicago	Cook	17:031	5,253,655	**7201**	**032, 033**	**03001-03019, 03101-03114**
	Du Page	17:043	658,835	**7202**	**034**	**03201-03206**
	Kane	17:089	278,405	**7203**	**035**	**03501-03502**
	Lake	17:097	440,372	**7204**	**036**	**03401-03404**
	McHenry	17:111	147,897	**7205**	**037**	**03300**
	Will	17:197	324,460	**7205**	**038**	**03700, 03800, 03900**
37 Peoria	Woodford	17:203	33,320	**7301**	007	00700
	Peoria	17:143	200,466	**7301**	**008**	**00800**
	Tazewell	17:179	132,078	**7301**	**009**	**00900**
	Bureau	17:011	39,114		007	
	Fulton	17:057	43,687		007	00700
	Stark	17:175	7,389		007	00700
	Putnam	17:155	6,085		007	
	Marshall	17:123	14,479		007	00700
	Mason	17:125	19,492			00700
1980 and 1990 match with 9.11% less than 1970						

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Illinois, continued						
38 Rockford	Winnebago	17:201	250,884	**7601**	**002, 003**	**00300, 00400**
	Boone	17:007	28,630	**7601**	004	**00400**
	De Kalb	17:037	74,624		004	
1970 and 1990 match. 1980 has 10.24% less.						
Indiana						
39 Fort Wayne	Allen	18:003	294,335	**7001**	**010, 011**	**01700, 01800**
40 Gary	Lake	18:089	522,965	**7206**	**001, 002, 003**	**00800, 00900, 01000**
Hammond East Chicago	Porter	18:127	119,816	**7206**	**004**	**01200**
41 Indianapolis	Marion	18:097	765,233	**5601**	**021**	**00101-00107**
	Boone	18:011	36,446	**5602**	**022**	**03300**
	Hamilton	18:057	82,027	**5602**	**022**	**03500**
	Hendricks	18:063	69,804	**5602**	**023**	**03300**
	Morgan	18:109	51,999	**5602**	**023**	**03400**
	Hancock	18:059	43,939	**5602**	**024**	**03500**
	Johnson	18:081	77,240	**5602**	**024**	**03400**
	Shelby	18:145	39,887	**5602**	**024**	**03500**
42 South Bend	St Joseph	18:141	241,617	**7101**	**006, 007**	**01500, 01600**
	Marshall	18:099	39,155	**7101**	013	02800
	Kosciusko	18:085	59,555		013	02800
	Jasper	18:073	26,138		013	
	Newton	18:111	14,844		013	
	Pulaski	18:131	13,258		013	
	Starke	18:149	21,997		013	
1980 and 1990 match with 13.95% less than 1970						
Kansas						
43 Wichita	Butler	20:015	44,782	**9701**	006	00600
	Sedgwick	20:173	366,531	**9701**	**005**	**00500**
	Wabaunsee	20:197	6,867		006	00600
	Lyon	20:111	35,108		006	00600
	Morris	20:127	6,419		006	00600
	Dickenson	20:041	20,175		006	00600
	Greenwood	20:073	8,764		006	00600
	Coffey	20:031	9,370		006	00600
	Marion	20:115	13,522		006	00600
	Chase	20:017	3,309		006	00600
1980 and 1990 match with 10.89% less than 1970						
Kentucky						
44 Louisville	Floyd, IN	18:043	61,169	**5001**	**18:034**	**00300**
	Clark, IN	18:019	88,838	**5001**	**18:035**	**00300**
	Jefferson, KY	21:111	685,004	**5001**	**21:003 21:004**	**02001-02002, 02101-02103**
	Harrison, IN	18:061	27,276		**18:034**	
	Washington, IN	18:175	21,932		**18:034**	
	Scott, IN	18:143	20,422		**18:035**	
1970 and 1990 match. 1980 has 8.34% more						

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Louisiana						
45 Baton Rouge	East Baton Rouge	22:033	366,191	**12301**	**015, 016**	**01301-01302, 01400**
46 New Orleans	Orleans Parish	22:071	557,515	**12302**	**021**	**01901-01904**
	Jefferson Parish	22:051	454,592	**12303**	**022, 023, 024, 024, 025**	**02000, 02100, 02200**
	St. Bernard Parish	22:087	64,097	**12303**	**025**	**02300**
	St. Tammany Parish	22:103	110,869	**12303**	**026**	**02300**
	Plaquemines Parish	22:075	26,049		**025**	**02300**

1980 and 1990 match. 1970 has 2.19% less

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
47 Shreveport	Caddo	22:015	80,721	**11601**	**001, 002**	**00100**
	Bossier	22:017	252,358	**11601**	**001, 002**	**00100**
	Webster Parish	22:119	43,631		**002**	

1970 and 1990 match. 1980 has 13.10% more

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Maryland						
48 Baltimore	Baltimore City	24:510	786,775	**1601**	**006**	**01501-01504**
	Baltimore	24:005	655,615	**1602**	**004**	**00301-00306**
	Ann Arundel	24:003	370,775	**1603**	**008**	**00201-00204**
	Carroll	24:013	96,356	**1603**	**004**	**00600**
	Harford	24:025	145,930	**1603**	**005**	**01000**
	Howard	24:027	118,572	**1603**	**007**	**01100**
Massachusetts						
49 Boston	Suffolk	25:025	650,142	**406**	**019, 021, 022**	**02001-02005, 02100**
	Essex	25:009	633,632	**402**	**013, 014, 015, 016, 018, 019**	**01600, 01700, 01800, 01900, 02700**
	Middlesex	25:017	1,367,034	**403**	**011, 012, 017, 018 020, 021, 023-027 010**	**01400, 01500, 02100, 02200, 02300, 02400, 02500, 02800, 02900, 03000, 03100, 03200**
	Norfolk	25:021	606,587	**404**	**023, 026, 027, 028, 029 030, 031, 032, 34**	**02500, 02600, 03100, 03300, 03400, 03500, 03600, 03800** 04200
	Plymouth	25:023	405,437	**405**	**031, 032, 033** 036, 037	**03600, 03700, 03800,** 04100, 04300
	Worcester	25:027 (part)	*		010 **026**	
	Bristol	25:005 (part)	**		**032** 034, 036, 037	**03800***** 04100***, 04200***, 04300***

* in county group, 010, county 027 has 161,208 while 017 has 27,783, in 026 027 has 29,583 while others have 178,072
** in county group 032, county 005 has 16,623 of 136,697, in county group 034 it has 101,273 of 107,130, in county group 036 it has 153,965 of 169,425, and in county group 037 it has 56,817 of 103,845
*** in PUMA 03800, county 005 has 19,807 of 149,515, in PUMA 04100 it has 83,832 of 1,094,84, in PUMA 04200 it has 101691 of 108,562, and in PUMA 04300 it has 59,172 of 103,261

No match. 1980 is missing 2.62% of 1970 and has additions of 1.26%. 1990 is missing 2.09% of 1970 and has additional 0.54%.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Massachusetts, continued						
50 Springfield	Hampden	25:013	443,018	**505**	**003, 004, 005, 006**	**00200, 00300, 00400, 00700**
Chicopee					002*	00600
Holyoke	Hampshire	25:015	138,813		**003, 006**	**00700**
					002*	00500, 00600
	Franklin	25:011	64,317		002*	00500, 00600

*in county group 002, county 011 has 64,317 of 127,730, county 013 has 10,891. In county group 003, county 103 has 70,118 of 122,166. In county group 006, county 013 has 82,858 of 117,101 in PUMA 00600, county 013 has 6,512 of 106,403. In PUMA 00700, county 013 has 91,580 of 102,159.
No match. 1980 has 2.45% less than 1970 in one area and 19.48% more in another. 1990 has 1.39% less and 2.39% more.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
51 Worcester	Worcester	25:027	614,239	**407**	**007, 008, 009, 010**	**00800, 00900, 01000 01100, 01200, 01300**
	Middlesex (part)	25:017 (part)	*		**010**	**01300**

*in county group 010, county 017 has 27,783 of 188,991 In PUMA01300, county 017 has 31,713 of 105,881. Probably different parts of county 017 so no match.
No match. 1980 has 4.52% more than 1970 in one area and 1990 has about 5.16% more (maybe in another area).

Michigan

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
52 Detroit	Wayne	26:163	2,337,891	**6601**	**036-044**	**03301-03308, 03401-03405, 03500, 03600, 03700**
	Macomb	26:099	694,600	**6602**	**045-049**	**03800, 03901-03903, 04000**
	Oakland	26:125	1,011,793	**6603**	**050-057**	**04101-04107, 04200**
53 Flint	Genesee	26:049	450,449	**6604**	**021, 022, 023**	**02000, 02101-02102**
	Lapeer	26:087	70,038	**6604**	024	02200
	Shiawassee	26:155	71,140		024	02200

1980 and 1990 match with 13.46% less than 1970 (or they can have 13.67% more)

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
54 Grand Rapids	Ottawa	26:139	157,174	**6801**	**017**	**01500**
	Kent	26:081	444,506	**6801**	**013, 014,**	**01300, 01401-01402**
55 Lansing	Clinton	26:037	55,893	**6901**	**020**	**01900**
	Eaton	26:045	88,337	**6901**	**020**	**01900**
	Ingham	26:065	275,520	**6901**	**018, 019**	**01700, 01800**

Minnesota

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
56 Duluth, MN	St Louis, MN	27:137	222,229	**8001**	**27:003 27:004**	**00300**
Superior, WI	Douglas, WI	55:031	44,421	**8001**	55:001	00100
	Ashland, WI	55:003	16,783		55:001	00100
	Bayfield	55:007	13,822		55:001	00100
	Burnett	55:013	12,340		55:001	00100
	Iron	55:051	6,730		55:001	00100
	Price	55:099	15,788		55:001	00100
	Rusk	55:107	15,589		55:001	00100
	Sawyer	55:113	12,843		55:001	00100
	Tayor	55:119	18,817		55:001	00100
	Wahburn	55:129	13,174		55:001	00100

1980 and 1990 match with 16.66% less than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Minnesota, continued						
57 Minneapolis St. Paul	Anoka	27:003	195,998	**8203**	**024**	**01200, 01300**
	Dakota	27:037	194,279	**8203**	**022**	**02300, 02400**
	Hennepin	27:053	941,411	**8201**	**014, 015**	**01500, 01600, 01700 01800, 01900, 02000**
	Ramsey	27:123	459,784	**8202**	**019, 020**	**02100, 02200**
	Washington	27:163	113,571	**8203**	**023**	**01400**
Mississippi						
58 Jackson	Hinds	28:049	250,998	**12001**	**009**	**00900**
	Rankin	28:121	69,427	**12001**	**010**	**01000**
	Copiah	28:029	26,503		**010**	**01000**
	Simpson	28:127	23,441		**010**	**01000**
1980 and 1990 match with 15.59% more than 1970						
Missouri						
59 Kansas City	Jackson, MO	29:095	629,266	**9803**	**29:008, 29:009, 29:010, 29:012**	**01001-01005**
	Johnson, KS	20:091	270,269	**9801**	**20:009**	**00901-00903**
	Cass,MO	29:037	51,029	**9801**	**29:012**	**00900**
	Wyandotte, KS	20:209	172,335	**9802**	**20:010**	**01000**
	Clay, MO	29:047	136,488	**9802**	**29:008 29:011**	**00800**
	Platte, MO	29:165	46,341	**9802**	**29:008 29:011**	**00800**
	Ray, MO	29:177	21,378		**29:012**	**00900**
	Lafayette, MO	29:107				**00900**
1980 has 1.64% more than 1970. 1990 has about 2% more than 1980						
60 St. Louis	Madison, IL	17:119	247,691	**10101**	**17:019 17:020**	**01800, 01900**
	St. Clair, IL	17:163	267,531	**10102**	**17:021 17:022**	**02000, 02100**
	St Louis	29:510	453,085	**10103**	**29:023**	**01201-01203**
	St Louis County	29:189	973,896	**10104**	**29:025**	**01101-01104**
	Franklin	29:071	71,233	**10105**	*****	**01400**
	Jefferson	29:099	146,183	**10105**	**29:026**	**01400**
	St Charles	29:183	144,107	**10105**	**29:024**	**01300**
* in 1980 Frankilin is with 6 other counties.						
1970 and 1990 match. 1980 has 3.19% less.						
Nebraska						
61 Omaha	Douglas,NE	31:055	397,038	**9401**	**006**	**01001-01004**
	Sarpy, NE	31:153	86,015	**9401**	**007**	**00900**
	Pottawattamie, IA	19:155	86,561	**9401**	019	01700
	Cass,IA	19:029	*		019	01700
	Fremont, IA	19:071	*		019	01700
	Harrison, IA	19:085	*		019	01700
	Mills, IA	19:129	*		019	01700
	Montgomery, IA	19:137	*		019	01700
	Page, IA	19:145	*		019	01700
	Shelby, IA	19:165	*		019	01700
	Washington, NE	31:177	15,508		**007**	**00900**
*together these counties total 103,606 in 1980 population.						
1980 and 1990 match with 2.72% more than 1970 in one area and 15.20% less in another.						
Nevada						
62 Las Vegas	Clark	32:003	463,087	**14001**	**001,002**	**00201-00205**

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
New Jersey						
63 Jersey City	Hudson	34:017	556,972	**1312**	010,011,012	**01301-01302**
64 Newark	Essex	34:013	851,116	**1315**	013,014, 015,016, 017	**03601-03602, 03200, 03300 03400,03500, 03601-03602**
	Morris	34:027	407,630	**1316**	018,019, 020,021	**02800,03700,03800, 03900**
	Union	34:039	504,094	**1317**	022,023, 024,025	**04100,04200,04300, 04400**
65 Paterson Clifton	Bergen	34:003	845,385	**1313**	004,005, 006,007, 008,009	**00400,00500,00600, 00700,00800,00900**
Passaic	Passaic	34:031	447,585	**1314**	001,002, 003	**01000,01100,01200**
66 Trenton	Mercer	34:021	307,863	**1401**	049,050	**05400,05500**
New Mexico						
67 Albuquerque	Bernalillo	35:001	419,700	**12901**	004,005	**00201-00204**
	Sandoval	35:043	34,799		**005**	00300
	Torance	35:057	7,491			00300
	Valencia	35:061	61,115			00300

1970 and 1990 match. 1980 has 8.29% more

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
New York						
68 Albany Schenectady Troy	Albany	36:001	285,909	**601**	005,006	**01100,01200**
	Rensselaer	36:083	151,966	**602**	007	**00900**
	Saratoga	36:091	153,759	**602**	008	**00800**
	Schenectady	36:093	149,946	**602**	009	**01000**
69 Binghamton	Susquehanna,PA	42:115	37,876	**1101**	42:007	00500
	Tioga, NY	36:107	49,812	**1101**	36:017	03500
	Broome, NY	36:007	213,648	**1101**	**36:029 36:030**	**03601-03602**
	Bradford, PA	42:015	62,919		42:007	00500
	Tioga, PA	42:117	40,973		42:007	00500
	Sullivan, PA	42:115	6,349		42:007	00500
	Wyoming, PA	42:131	26,433		42:007	00500
	Cortland, NY	36:023	48,820		36:017	03500
	Tompkins, NY	36:109	87,085		36:017	03500

1980 and 1990 match with 29.10% less than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
70 Buffalo	Erie	36:029	1,015,472	**801**	023,024	**02500,02600,02700, 02800,02900, 03001-03003**
	Niagra	36:063	227,354	**801**	025	**02301-02302**
71 New York	Kings	36:047	2,230,936	**1301**	037	**05301- 05318**
	New York	36:061	1,428,285	**1302**	038	**05101-05110**
	Queens	36:081	1,891,325	**1303**	039	**05401-05414**
	Richmond	36:085	352,121	**1304**	040	**05201-05203**
	Bronx	36:005	1,168,972	**1305**	036	**05001-05010**
	Nassau	36:059	1,321,582	**1306**	043	**04601-04609, 04700, 480004900**
	Suffolk	36:103	1,284,231	**1307**	044	**02401-02412**
	Rockland	36:087	259,530	**1308**	042	**04301-04302**
	Westchester	36:119	866,599	**1308**	041	**04401-04405, 04500**

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
New York, continued						
72 Rochester	Orleans	36:073	38,496	**701**	022	02200
	Monroe	36:055	702,238	**701**	019,020	02000,02100
	Livingston	36:051	57,006	**701**	021	01900
	Wayne	36:117	84,581	**701**	021	01900
	Ontario	36:069	88,909		021	01900
	Yates	36:123	21,459		021	03300
	Genesee	36:037	59,400		022	02200
	Wyoming	36:121	39,895		022	02200
	Steuben	36:101	99,217			03300

No match. 1980 and 1990 have 4.36% less than 1970 in one area. 1980 has 12.51% and 1990 has 10.08% more in another area.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
73 Syracuse	Oswego	36:075	113,901	**702**	015	00400
	Onondaga	36:067	463,920	**702**	013,014	01500,01600,01700
	Madison	36:053	65,150	**702**	016	01400
	Chenango	36:017	49,344		016	01400

1980 and 1990 match with 7.67% more than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
74 Utica	Oneida	36:065	253,466	**703**	011,012	00501-00502
Rome	Herkimer	36:043	66,714	**703**	010	00600
	Fulton	36:035	55,153		010	00600
	Montgomery	36:057	53,439		010	

1980 and 1990 match with 20.84% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
North Carolina						
75 Charlotte	Mecklenburg	37:119	404,270	**2401**	036,037	00801-00804
	Union	37:179	70,380	**2401**	037	01200
	Stanely	37:167	48,517			01200

1970 and 1980 match. 1990 has 10.22% more.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
76 Greensboro	Guilford	37:081	317,154	**2301**	010,011	01300,01400
Winston	Forsyth	37:067	243,683	**2302**	008,009	02000,02100
Salem	Randolph	37:151	91,728	**2302**	013	01600
High Point	Yadkin	37:197	28,439	**2302**	007	02200
	Alamance	37:001	99,319		013	01700
	Surry	37:171	59,449		007	02200
	Stokes	37:169	33,086		007	02200
	Davie	37:059	24,599		007	02200

No match. 1980 has 17.65% less than 1970. 1990 has 4.18% less.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Ohio						
77 Akron	Summit	39:153	524,472	**6301**	023,024	04701-04704
	Portage	39:133	135,856	**6301**	025	00900
78 Canton	Stark	39:151	378,823	**6302**	027,028	05001-05003

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Ohio, continued						
79 Cincinnati	Hamilton	39:061	873,224	**5801**	**052,053, 054**	**05401-05406**
	Clermont	39:025	128,483	**5802**	**055**	**03300**
	Warren	39:165	99,276	**5802**	**055**	**03000**
	Dearborn, IN	18:029	34,291	**5802**	*	*
	Boone, KY	21:015	45,842	**5802**	**21:002**	**01400**
	Campbell, KY	21:037	83,317	**5802**	**21:002**	**01400**
	Kenton, KY	21:117	137,058	**5802**	**21:001**	**01300**
	Carrol, KY	21:041	9,270		**21:002**	**01400**
	Gallatin, KY	21:077	4,842		**21:002**	**01400**
	Grant, KY	21:081	13,308		**21:002**	**01400**
	Owen. KY	21:187	8,924		**21:002**	**01400**
	Pendleton, KY	21:191	10,989		**21:002**	**01400**

* with other counties that together have more people.
1980 and 1990 match with 2.45% less than 1970 in one area and 3.38% more in another.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
80 Cleveland	Cuyahoga	39:035	1,498,410	**6304**	**008,009, 010,011 012,013, 014,015**	**03901-03905, 04000, 04100 04200,04300,04400, 04500**
	Geauga	39:055	74,474	**6305**	**017**	00400
	Lake	39:085	212,801	**6305**	**017**	**04600**
	Medina	39:103	113,150	**6305**	**016**	**00800**
	Ashtabula	39:007	104,215		018	00400

1970 and 1980 match. 1990 has 3.92% less.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
81 Columbus	Franklin	39:049	869,132	**6001**	**42043**	**05101-05107**
	Delaware	39:041	53,840	**6001**	044	01700
	Pickaway	39:129	43,662	**6001**	044	02700
	Fairfield	39:045	93,678		044	
	Madison	39:097	33,004		044	01700
	Union	39:159	29,536			01700
	Ross	39:141	65,004			02700

1980 and 1990 match with 10.09% less than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
82 Dayton	Miami	39:109	90,381	**5901**	**050**	**02100**
	Preble	39:135	38,223	**5901**	**050**	**02100**
	Montgomery	39:113	571,697	**5901**	**046,047, 048**	**05201-05205**
	Greene	39:057	129,769	**5901**	**049**	**02600**
	Darke	39:037	55,096			**02100**

1970 and 1980 match. 1990 has 9.66% more.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
83 Lorain Elyria	Lorain	39:093	274,909	**6306**	**006,007**	**03700,03800**
84 Toledo	Monroe, MI	26:115	134,659	**6501**	**26:033**	**26:03000**
	Lucas, OH	39:095	471,741	**6501**	**39:002, 39:003**	**39:03601-39:03604**
	Wood, OH	39:173	107,372	**6501**	**004**	**00200**
85 Youngstown Warren	Trumbull	39:155	241,863	**902**	**019,020**	**04801-04802**
	Mahoning	39:099	289,487	**902**	**021,022**	**04901-04902**

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MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Oklahoma						
86 Oklahoma City	Canadian	40:017	56,452	**10701**	**010** 013	**00900**
	Cleveland	40:027	133,173	**10701**	**010,012**	**01100**
	Oklahoma	40:109	568,933	**10701**	**010,011**	**01000**
	McClain	40:087	*		**010** 013	
	Pttawatomie	40:125	*		**010** 013	
	Logan	40:083	26,881			**00900**

*123 of county 087 is in county group 010, 20,168 is in county group 013. 51 of county 125 is in county group 010 and 55,188 is in county group 013.   47,711 of county 017 is in county group 013.
No match. 1980 has 6.29% less than 1970 and 1990 has 3.54% more than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
87 Tulsa	Osage	40:113	39,327	**10601**	**004,005**	**00600**
	Tulsa	40:143	470,593	**10601**	**004,005**	**00700**
	Creek	40:037	59,016	**10601**	**005**	**00600**
Oregon						
88 Portland	Multnomah, OR	41:051	562,640	**13701**	**002,003**	**01300,01400**
	Clackamas, OR	41:005	241,919	**13702**	**005**	**01300,01500**
	Washington, OR	41:067	245,808	**13702**	**004**	**01200,01300**
	Clark, WA	53:011	192,227	**13702**	**010**	**01901-01902**
Pennsylvania						
89 Allentown	Lehigh, PA	42:077	272,349	**1413**	**051,052, 053,054**	**02001-02002**
	Bethlehem	Northampton, PA	42:095	225,418	**1414**	**052,053, 054**	**02101-02102**
Easton	Warren, NJ	34:041	84,429	**1414**	34:051	34:04000
	Hunterdon, NJ	34:019	87,361		34:051	
	Sussex, NJ	34:037	116,119		34:052	34:04000

1980 and 1990 match with 14.50% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
90 Erie	Erie	42:049	279,780	**901**	**001,002**	**00101-00102**
91 Harrisburg	Dauphin	42:043	232,317	**1501**	**041,042**	**03601-03602**
	Cumberland	42:041	178,541	**1501**	**043,044**	**03700**
	Perry	42:099	35,718	**1501**	**044**	**03700**
92 Johnstown	Cambria	42:021	183,263	**6201**	**035**	**03400**
	Somerset	42:111	81,243	**6201**	037	**03400**
	Bedford	42:009	46,784		037	02400
	Fulton	42:057	12,842		037	02400
	Huntingdon	42:061	42,253		037	02400

1970 and 1990 match. 1980 has 30.71% less. (1980 and 1990 can also match)

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
93 Lancaster	Lancaster	42:071	362,346	**1502**	**046-048**	**03501-03503**
94 Philadelphia	Philadelphia	42:101	1,688,210	**1406**	**42:055**	**02601-02611**
	Bucks	42:017	479,211	**1407**	**42:061-064**	**02701-02703**
	Montgomery	42:091	643,621	**1408**	**42:056-060**	**02801-02805**
	Chester	42:029	316,660	**1409**	**42:065-067**	**02901-02903**
	Delaware	42:045	555,007	**1410**	**42:068-072**	**03001-03003**
	Burlington, NJ	34:005	362,542	**1404**	**34:045-047**	**04500, 04600, 04700**
	Camden, NJ	34:007	471,650	**1405**	**34:041-044**	**04800,04900,05000, 05100**
	Gloucester, NJ	34:015	199,917	**1405**	**34:048**	**05200,05300**

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Pennsylvania, continued						
95 Pittsburgh	Allegheny	42:003	1,450,085	**6202**	**025-031**	**01301-01312**
	Westmoreland	42:129	392,294	**6203**	**032,033**	**03301-03303**
	Beaver	42:007	204,441	**6204**	**023**	**03800**
	Washington	42:125	217,074	**6204**	**024**	**03901-03902**
	Lawrence*	42:073	107,150		**022**	**03800**

* in 1970 Lawrence is with 5 other counties in county group 9003.
1970 and 1980 match. 1990 has 4.7% more. (1980 and 1990 can also match)

96 Reading	Berks	42:011	312,509	**1412**	**049,050**	**03101-03102**
97 Wilkes Barre Hazelton	Luzerne	42:079	343,079	**1201**	**012,013, 014**	**00700**
98 York	Adams	42:001	68,292	**1503**	**040**	**02300**
	York	42:133	312,963	**1503**	**039,040**	**02501-02503**
	Franklin	42:055	113,629		**038**	**02300**

1970 and 1980 match. 1990 has 29.80% more. (1980 and 1990 can also match)

Rhode Island						
99 Providence (this is the whole state of Rhode Island)	Bristol	44:001	46,942	**409**	**004**	**00500**
	Kent	44:003	154,163	**409**	**003, 005***	**00400**
	Providence	44:007	571,349	**409**	**001, 002, 003, 004**, 006**	**00100,00200,00300 00700,00800**
	Newport	44:005	81,383	**410**	**004**	**00500**
	Washington	44:009	93,317	**410**	**005***	**00600**

*29,803 of county 003 is in county group 005 with county 009.
**46,942 of county 001 and 50,980 of county 007 are with county 005 in county group 004.
Can match all if use whole state. (not MSA as defined in 1970)

South Carolina						
100 Charleston	Charleston	45:019	276,974	**2902**	**019,020**	**01201-01202**
	Berkeley	45:015	94,727	**2902**	**021**	**01100**
	Dorchester	45:035	58,761		**021**	**01100**

1980 and 1990 match with 15.81% more than 1970.

101 Columbia	Richland	45:079	269,735	**2701**	**013,014**	**01601-01602**
	Lexington	45:063	140,353	**2701**	**015**	**01700**
102 Greenville	Pickens	45:077	79,292	**2601**	**002**	**00100**
	Greenville	45:045	287,913	**2601**	**003,004**	**00201-00202**
	Oconee	45:073	48,611		**002**	**00100**

1980 and 1990 match with 13.24% more than 1970.

Tennesse						
103 Chattanooga	Hamilton, TN	47:065	287,740	**4401**	**47:015, 47:016**	**01200,01300**
	Walker, GA	13:295	56,470	**4401**	**13:001**	**00300**
	Catoosa, GA	13:047	36,991		**13:001**	**13:00300**
	Dade, GA	13:083	12,318		**13:001**	**13:00300**

1980 and 1990 match with 14.33% more than 1970.

Table 4, continued

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Tennessee, continued						
104 Knoxville	Blount	47:009	77,770	**4601**	**024**	**00600**
	Knox	47:093	319,694	**4601**	022,023	**00800,00900**
	Anderson	47:001	67,346	**4601**	024	**00700**
	Union	47:173	11,707		**024**	**00700**
	Granger	47:057	16,751			**00700**
	Jefferson	47:089	31,284			**00700**
	Sevier	47:155	41,418			**00600**

No match. 1980 has 2.52% more than 1970 and 1990 has 21.76% more than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
105 Memphis	Shelby	47:157	777,113	**4201**	**47:001, 47:002**	**01900,02000**
	Crittenden, AR	05:035	49,499	**4201**		

1980 and 1990 match with 5.99% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
106 Nashville	Wilson	47:189	56,064	**4501**	011	02300
Davidson	Sumner	47:165	85,790	**4501**	**010**	**02400**
	Davidson	47:037	477,811	**4501**	009	00501-00505
	Robertson	47:147	37,021		010	02300
	Rutherford	47:149	84,058		011	02500
	Wilson	47:189	56,064			02300
	Dickson	47:043	30,037		008	02300
	Williamson	47:187	58,108		008	02300
	Cheatham	47:021	21,616		008	02300

No match. 1990 has 9.05% less than 1970. 1980 is missing this 9.05% but also has and additional 5.97% of 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Texas						
107 Austin	Travis	48:453	419,573	**11501**	**044**	**04901-04904, 05000**
108 Beaumont	Orange	48:361	83,838	**12501**	**056**	**06100**
Port Arthur	Jefferson	48:245	250,938	**12501**	055,054	05900,06000
	Hardin	48:199	40,721		**056**	**06100**

1980 and 1990 match with 12.16% more than 1970

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
109 Corpus Christi	San Patrico	48:409	58,013	**12702**	035	04800
	Nueces	48:355	268,215	**12702**	**039**	**04301-04302**
	Aransas	48:007	14,260		035	04800
	Bee	48:025	26,030		035	04800
	Brooks	48:047	8,428		035	04800
	Duval	48:131	12,517		035	04800
	Jim Wells	48:249	36,498		035	04800
	Kenedy	48:261	543		035	04800
	Kleberg	48:273	33,358		035	04800
	Live Oak	48:297	9,606		035	04800
	McMullen	48:311	789		035	04800
	Refugio	48:391	9,289		035	04800
	Willacy	48:489	17,495		035	04800

1980 and 1990 match with 17.78% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Texas, continued						
110 Dallas	Collin	48:085	144,576	**11301**	**022**	**02300,02400**
	Denton	48:121	143,126	**11301**	**023**	**02201-02202**
	Rockwall	48:397	14,528	**11301**	**024**	**01500**
	Kaufman	48:257	39,015	**11301**	**024**	**01500**
	Dallas	48:113	1,556,390	**11301**	**013 - 018**	**02501-02509 , 02600, 02700 02800, 02901-02904**
	Tarrant*	48:439	860,880	**11302**	**019,020, 021**	**01901-01904, 02001-02002, 02101-02104**
	Johnson	48:251	67,649	**11302**		
	Ellis	48:139	59,743	**11301**	**024**	**01500**

*Fort Worth is also in Tarrant County
1980 and 1990 match with 2.4% more in 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
111 El Paso	El Paso	48:141	479,889	**12801**	**032**	**03701-03705**
112 Fort Worth	Tarrant	48:439	860,880	**11302**	**019,020, 021**	**01901-01904, 02001-02002 02101-02104**
	Johnson	48:251	67,649	**11302**	025	01800
	Hood	48:221	17,714		025	01800
	Parker	48:367	44,609		025	01800
	Wise	48:497	26,575		025	01800

1980 and 1990 match with 7.29% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
113 Houston	Brazoria	48:039	169,587	**12502**	**062**	**06400**
	Fort Bend	48:157	130,846	**12502**	**063**	**06501-06502**
	Montgomery	48:339	128,487	**12502**	**064**	**06200**
	Liberty	48:291	47,088	**12502**	**064**	
	Harris	48:201	2,409,547	**12502**	**058 - 061**	**06601-06615, 06700, 06800,06901-06908**
	Waller	48:473	19,798		**063**	
	Chambers	48:071	18,538		**064**	

1970 and 1990 match. 1980 has 1.33% more.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
114 San Antonio	Bexar	48:029	988,800	**12601**	**040,041**	**04401-04408, 04501-04502**
	Guadalupe	48:187	46,708	**12601**	042	04600
	Comal	48:091	36,446		042	04600
	Karnes	48:255	13,593		042	04600
	Wilson	48:493	16,756		042	04600

1980 and 1990 match with 4.51% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Utah						
115 Salt Lake City	Salt Lake	49:035	619,066	**13202**	**002,003**	**00400**
	Davis	49:011	146,540	**13202**	**004**	**00300**
	Tooele	49:045	26,033			**00300**

1970 and 1980 match. 1990 has 3.40% more.

Table 4, continued

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Virginia						
116 Newport News	York	51:199	35,463	**2001**	**021**	
Hampton	Hampton	51:650	122,617	**2001**	**020**	**03000**
	Newport News	51:700	144,903	**2001**	**021**	**03100**
	Gloucester	51:073	20,107		**021**	
	James City	51:095	22,763		**021**	
	Poquoson	51:735	8,726		**021**	
	Williamsburg	51:830	9,870		**021**	
	York	51:199	35,463			

No match. 1980 has 31.99% more than 1970 and 1990 has 11.70% less than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
117 Norfolk	Portsmouth	51:740	104,577	**2003**	**016**	**02600**
Portsmouth	Virginia Beach	51:810	262,199	**2003**	**019**	**02900**
	Chesapeake	51:550	114,486	**2003**	**017**	**02500**
	Norfolk	51:710	266,979	**2002**	**018**	**02700**
	Suffolk	51:800	47,621		**016**	

1970 and 1990 match. 1980 has 6.36% more.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
118 Richmond	Hanover	51:085	50,398	**1901**	**025**	**02000**
	Henrico	51:087	180,735	**1901**	**025**	**01900**
	Richmond	51:760	219,214	**1901**	**023**	**02100**
	Chesterfield	51:041	141,372	**1901**	**024**	**01800**
	Charles City	51:036	6,692		**025**	**02000**
	Goochland	51:075	11,761		**025**	**02000**
	New Kent	51:127	8,781		**025**	**02000**
	Powhatan	51:145	13,062		**025**	**02000**

1980 and 1990 match with 6.81% more than 1970.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Washington						
119 Seattle	King County	53:033	1,269,749	**13501**	**017,018**	**01701-01703**
Everett						**01801-01808**
	Snohomish	53:061	337,720	**13502**	**019**	**01001-01004**
120 Spokane	Spokane	53:063	341,835	**13401**	**005,006**	**00500,00600**
121 Tacoma	Pierce	53:053	485,643	**13403**	**013,014**	**01301-01304**

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
West Virginia						
122 Huntington	Lawrence, OH	39:087	63,849	**4801**	**39:059**	**03500**
Asland	Cabel, WV	54:011	106,835	**4801**	**54:010**	**00800**
	Wayne, WV	54:099	46,021	**4801**	54:011	**00800**
	Boyd, KY	21:019	55,513	**4801**	21:011	01100
	Gallia, OH	39:053	30,098		**39:059**	03500
	Vinton, OH	39:163	11,584		**39:059**	
	Jackson,OH	39:079	30,592			03500
	Carter, KY	21:043	25,060		21:011	01100
	Elliot,KY	21:063	6,908		21:011	01100
	Greenup,KY	21:089	39,132		21:011	01100
	Lawrence, KY	21:127	14,121		21:011	01100
	Lincoln,WV	54:043	23,675		54:011	**00800**
	Logan,WV	54:045	50,679		54:011	**00800**
	Mason,WV	54:053	27,045		54:011	**00800**
	Mingo, WV	54:059	37,336		54:011	**00800**

No Match. 1980 has 15.31% more than 1970 in one area and 37.3% less in another area. 1990 has 73.26% more than 1970 in one area and 20.39% less in another.

MSA	1970 Counties/ Other Counties	Cnty Num	1980 Pop.	1970 County Group	1980 County Group	1990 PUMA
Wisconsin						
123 Appleton	Outagamie	55:087	128,799	**7801**	**005**	**00400**
Oshkosh	Winnebago	55:139	131,703	**7801**	**006**	**00500**
	Calumet	55:015	30,867	**7801**	**006**	**00400**
124 Madison	Dane	55:025	323,545	**7702**	**017,018**	**01600,01700**
125 Milwaukee	Milwaukee	55:079	964,988	**7703**	**023,024**	**02201-02206**
	Ozaukee	55:089	66,981	**7704**	**026**	**02400**
	Washington	55:131	84,848	**7704**	**026**	**02400**
	Waukesha	55:133	280,326	**7704**	**025**	**02300**

NOTES: County group or PUMA numbers in bold are included in the match. Plain text numbers are not. Unless otherwise indicated, the 1970, 1980, and 1990 definitions match exactly.