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Minnesota AGRICULTURAL ECONOMIST



NO. 580

JUNE 1976

Recent Trends In Population And Per Capita Income; U.S., Ninth Federal Reserve District, And Minnesota

Population distribution changes are clearly occurring throughout Minnesota, and they will affect all of the state's residents. This issue of *Minnesota Agricultural Economist* analyzes recent data, projecting estimates for the future.

By John S. Hoyt, Jr.

Introduction

To make revenue-sharing allocations to states, places, and minor civil divisions,¹ the U.S. Bureau of the Census makes annual estimates of populations and per capita incomes for each of the nation's 39,246 governmental subdivisions.

Data from the 1970 Census of Population and Housing are used for base year information; these include the 1970 population (April 1) and the 1969 per capita income. The Bureau, for the U.S. Office of Revenue Sharing, makes current estimates (for this report, 1973 population and 1972 per capita income) to base federal revenue-sharing allo-

cations under the State and Local Fiscal Assistance Act of 1972.

The 1973 population and 1972 income estimates were made methodologically, including such components as natural increase, net migration, adjustments for special populations, Internal Revenue Service tax returns, Social Security data, and similar information.²

This issue of *Minnesota Agricultural Economist*:

a) Summarizes these data by type of subdivision for the 39,000+ governmental subdivisions—at the

²For a brief methodological summary, see Current Population Reports, *Population Estimates and Projections*, Series P-25, No. 568, June 1975, U.S. Department of Commerce. For a detailed discussion, see U.S. Bureau of the Census, *Census Tract Papers*, Series GE-40, No. 10, "Statistical Methodology of Revenue Sharing and Related Estimate Studies," U.S. Government Printing Office, 1974.

national, Upper Midwest, and Minnesota levels—so comparisons of these aggregate data can be made; and,

b) Compares, for the 877 Minnesota cities, the *direction* of population change that *actually* occurred in the 1960-70 decade to the *estimated* direction of this change in 1970-73.

Tables 1, 2, and 3 show numerical data at three levels of aggregation, and figures 1 and 2 illustrate the geographic distribution of city population changes in each of the two time periods.

Population and per capita income summary trends

Table 1 summarizes for the entire United States (the 50 states and the District of Columbia) the 1970 and 1973 populations and the 1969 and 1972 per capita incomes for states, counties, places, and minor civil divisions (MCDs). These are aggregated by 5 groups of size classes within each of these political subdivisions.

¹"Places" are incorporated political subdivisions. For Minnesota, places are all the cities (formerly cities and villages). Minor Civil Divisions (MCDs) are unincorporated political subdivisions. For Minnesota, they are all the townships.



The Federal Government expressed interest in Minnesota Analysis and Planning System (MAPS) use of census data August 11 when John S. Hoyt, Jr., director of MAPS, left, was invited to lunch with Elliot L. Richardson, Secretary of Commerce, center, and Vincent

P. Barabba, director of the Bureau of the Census, right. Hoyt left a draft of this article for review and briefed the two on MAPS and MAPS clientele use of census data extrapolated by MAPS, located on the University of Minnesota's St. Paul Campus.

Several statistics merit special attention. Average state populations increased by 3.2 percent over the 3-year (1970-1973) period, and average per capita income rose by 23.2 percent. However, distribution of this change within the nation's 3,105 counties was not even.

Counties with populations of 50,000 or more increased their populations by only 3 percent. Yet they accounted for 79.2 percent of the total county populations in 1970. The greatest growth rate (5.2 percent) from 1970-1973 was by counties in the 25,000-50,000 population size, although these counties account for only 9.9 percent of total county populations.

Despite the lower population growth rate in these larger counties, their per capita income increases between 1969 and 1972 were highest—27.6 percent over the 3-year period. Although care and caution must be used to make judgments

from data aggregated at the national level, probably many places (cities) in both the 50,000+ and the 25,000-50,000 size classes are located within these larger counties. As such, the impact of higher-than-average per capita incomes in the growing urban and suburban communities would account for these counties' income increases.

Generally, the rate of population change is greatest in the 25,000-50,000 county size class, and the rate declines as the size class becomes smaller. Because of the probable absence of places in these counties that are growing urban centers, this progression appears logical. The number of counties of under 1,000 population (26) is less than 1 percent of the total number. This is too small a portion of the total to produce reliable "average" statistics.

Places (generally, cities) exhibited different national average population and per capita trends by size

class than did the counties. The largest size class (50,000+) in this grouping showed a net decline in estimated population during 1970-73—a total loss of 480,000+ residents. On the other hand, the estimated per capita incomes of those city residents increased by 36.6 percent during 1969-72. Both in 1969 and 1972, populations in cities of 25,000-50,000 had higher per capita income levels than in cities in either larger or smaller size class groups; however, their rate of increase in per capita income (21.4 percent) was the lowest of the five size classes.

Also worth noting is that places of less than 1,000 population—comprising 54 percent of the number of all places (19,229)—had the lowest per capita income of any size class of place in both 1969 and 1972. By the same token, their rate of growth in population over the 3-year period—4.7 percent—was below that of the next two larger size classes. These data tend to support

Table 1. Population and per capita income, 1969 and 1973, United States

	Number	1970 Population		1969 average PCI	1973 est. Total	Population Average	1972 est. ave. PCI	Average percent change	
		Total	Average					Pop.	PCI
States	51	203,299,933	3,986,273	\$3,119	209,844,289	4,114,593	\$3,780	3.2	21.2
Counties:									
50,000 +	666	157,400,626	236,337	\$3,143	162,099,236	243,392	\$4,012	3.0	27.6
25-50,000	564	19,735,547	34,992	\$2,437	20,764,215	36,815	\$3,012	5.2	23.6
10-25,000	1,005	16,469,083	16,387	\$2,218	17,159,191	17,073	\$2,768	4.2	24.8
1-10,000	844	5,038,293	5,969	\$2,207	5,229,445	6,196	\$2,798	3.8	26.8
Under 1,000	26	17,858	686	\$2,562	17,405	669	\$3,254	-2.5	27.0
All counties	3,105	198,661,407	63,981	\$2,972	205,269,492	66,109	\$3,776	3.3	27.1
Places:									
50,000 +	388	72,699,096	187,368	\$2,924	72,218,808	186,130	\$3,993	-0.7	36.6
25-50,000	467	16,222,792	34,738	\$3,341	16,754,921	35,877	\$4,056	3.3	21.4
10-25,000	1,150	17,893,812	15,559	\$3,249	18,810,517	16,356	\$3,949	5.1	21.5
1-10,000	6,932	22,323,103	3,220	\$2,965	23,497,562	3,389	\$3,656	5.2	23.3
Under 1,000	10,292	4,133,743	401	\$2,513	4,330,119	420	\$3,108	4.7	23.7
All places	19,229	133,272,546	6,930	\$3,012	135,611,927	7,052	\$3,908	1.8	29.7
MCDs:									
50,000 +	94	9,918,226	105,513	\$3,868	10,050,637	106,921	\$4,696	1.3	21.4
25-50,000	183	6,239,835	34,097	\$3,677	6,477,664	35,397	\$4,423	3.8	20.3
10-25,000	611	9,257,629	15,151	\$3,513	9,814,343	16,062	\$4,232	6.0	20.5
1-10,000	5,823	16,369,182	2,811	\$2,887	17,333,700	2,976	\$3,494	5.9	21.0
Under 1000	10,150	3,900,546	384	\$2,289	4,045,305	398	\$2,884	3.6	26.0
All MCDs	16,861	45,685,418	2,709	\$3,284	47,721,649	2,830	\$3,973	4.5	21.0

Table 2. Population and per capita income, 1969 and 1973, 9th Federal Reserve District

	Number	1970 Population		1969 average PCI	1973 est. Total	Population Average	1972 est. ave. PCI	Average percent change	
		Total	Average					Pop.	PCI
States	6	19,084,208	3,180,701	\$3,131	19,537,643	3,256,273	\$3,760	2.4	20.1
Counties:									
50,000 +	64	13,775,266	215,238	\$3,387	13,984,907	218,514	\$4,059	1.5	19.8
25-50,000	65	2,355,973	36,245	\$2,599	2,479,732	38,149	\$3,126	5.3	20.3
10-25,000	129	2,085,922	16,169	\$2,393	2,177,217	16,877	\$2,925	4.4	22.2
1-10,000	158	865,377	5,477	\$2,277	894,219	5,659	\$2,858	3.3	25.5
Under 1,000	3	1,670	556	\$2,660	1,575	525	\$3,949	-5.6	48.5
All counties	419	19,084,208	45,547	\$3,131	19,537,650	46,629	\$3,760	2.4	20.1
Places:									
50,000 +	40	6,170,016	154,250	\$3,369	5,941,953	148,548	\$4,016	-3.7	19.2
25-50,000	59	2,121,394	35,955	\$3,364	2,162,242	36,648	\$4,146	1.9	23.2
10-25,000	120	1,865,403	15,545	\$3,387	1,951,684	16,264	\$4,080	4.6	20.5
1-10,000	871	2,533,630	2,908	\$3,068	2,687,344	3,085	\$3,715	6.1	21.1
Under 1,000	1,738	651,986	375	\$2,543	681,454	392	\$3,067	4.5	20.6
All places	2,828	13,342,429	4,717	\$3,273	13,424,677	4,747	\$3,938	0.6	20.3
MCDs:									
50,000 +	2	131,024	65,512	\$3,729	128,089	64,044	\$4,484	-2.2	20.2
25-50,000	9	296,224	32,913	\$4,367	316,316	35,146	\$5,128	6.8	17.4
10-25,000	46	701,255	15,244	\$3,530	762,141	16,568	\$4,248	8.7	20.3
1-10,000	1,202	2,777,247	2,310	\$2,833	2,979,963	2,479	\$3,386	7.3	19.5
Under 1000	5,431	1,678,365	309	\$2,168	1,761,211	324	\$2,712	4.9	25.1
All MCDs	6,690	5,584,115	834	\$2,823	5,947,720	889	\$3,413	6.6	20.9

the conclusion that very small cities generally are not candidates for substantial economic growth.

In the category of active minor civil divisions (MCDs)—commonly towns in New England, New York, and Wisconsin, and townships or parishes in other parts of the United States—two observations are noteworthy:

First, in the larger MCDs (the 50,000 + and 25,000-50,000 group-

ings), per capita income in both 1969 and 1972 is substantially above the national average per capita incomes of \$3,284 and \$3,973, respectively. Yet the growth rate of income is at a level about equal to the U.S. rate and well below county and place overall rates. On the other hand, in the two smallest size MCDs (under 1,000 and 1,000-10,000 populations), population growth rates are well above the national rate. Yet per capita income

growth is only modest, at best, and in both 1969 and 1972, per capita income levels are only about 75 percent of the national average. These two groups also account for 95 percent of the total number of MCDs, while containing only 10 percent of the total 1970 U.S. population.

Table 2 summarizes the same data series, but only for the 6 states comprising (in whole or in part) the Ninth Federal Reserve District, re-

ferred to herein as the Upper Midwest (UM).³

For the Upper Midwest as a whole, both population and per capita income growth in the 3-year periods was below the growth in the total United States. These same trends were true at the county level, the place level, and at the MCD level, except that population growth at the MCD level was above the comparable national statistic.

Population growth in each county size grouping followed the national trends in these same groupings. Low population growth was exhibited by counties with populations of over 50,000 persons (+1.5 percent), and estimated population declines (-5.6 percent) were in counties of less than 1,000 population.

At the place (city) level, the same national "image" appears. Cities of over 50,000 were estimated to have lost population, and cities of 25,000-50,000 grew at a low rate (1.9 percent). Conversely, only these two groups, plus cities of 10,000-25,000 populations, exhibited 1972 per capita income levels above both the national and UM levels.

At the active minor civil division level in the Upper Midwest, a replication of national data occurs. The

³These states are Michigan, Wisconsin, Minnesota, North Dakota, South Dakota, and Montana.

largest MCDs experienced (in this case, negative) population change (-2.2 percent), but maintained per capita income levels well above the national and UM levels. The smaller MCDs—99 percent of all the MCDs in the Upper Midwest—had positive growth rates in population, but 1972 per capita income levels of only about 70-80 percent of the national and UM levels.

Minnesota data are shown in table 3. For the whole state, the levels and rates of growth in population and per capita income were below the national level in both the initial and terminal years. This was also true comparing Minnesota to the Upper Midwest, with one exception—per capita income growth was marginally higher (+20.7 percent) in Minnesota than in the Upper Midwest as a whole (+20.1 percent).

Minnesota's nine largest counties experienced the lowest population and per capita income growth—0.9 percent and 20.6 percent, respectively, of the four county size groups. Nonetheless, per capita income levels in these counties remained 13 percent above the state average level in 1972, as they were in 1969. Even though population and per capita growth rates in the three smaller size county groupings were near or above the state average rate of population growth, the level of per capita incomes remained well below the

state average level (75 to 85 percent of it).

Minnesota's five cities with populations of 50,000+ experienced a dramatic decline in estimated population during the 3-year period (-7.9 percent), but their residents' per capita income remained 13 percent above the state average level. On the average, cities with populations of 10,000-25,000 grew the most rapidly, at a rate 3.7 times higher than did the state population rate. Per capita income in these cities also increased slightly, from 108 percent of the state average level in 1969 to 109 percent in 1972.

On the other hand, in the 580 Minnesota cities in the 0-1,000 population class (66 percent of the total 877 cities), per capita income remained at an average level of about 80 percent of the state average level and only 76 percent of the per capita income level of all U.S. cities in the 0-1,000 population size class.

Of the 1,791 Minnesota townships (MCDs), 1,663 (93 percent) showed an average increase in estimated population of 17 persons per township, and per capita incomes remained at about 70 percent of the state's average. This is despite the highest estimated rate of increase in per capita income.

In summary, these revenue-sharing data indicate that Minnesota's population growth is occurring most rapidly in counties with populations

Table 3. Population and per capita income, 1969 and 1973, Minnesota

	Number	1970 Population		1969 average PCI	1973 est. Total	Population Average	1972 est. ave. PCI	Average percent change	
		Total	Average					Pop.	PCI
States	1	3,806,103	3,806,103	\$3,038	3,890,066	3,890,066	\$3,666	2.2	20.7
Counties:									
50,000 +	9	2,266,377	251,819	\$3,437	2,286,546	254,060	\$4,145	0.9	20.6
25-50,000	20	696,383	34,819	\$2,561	729,296	36,464	\$3,091	4.7	20.7
10-25,000	46	761,077	16,545	\$2,376	790,195	17,178	\$2,903	3.8	22.2
1-10,000	12	82,266	6,855	\$2,165	84,032	7,002	\$2,701	2.1	24.8
Under 1,000	0	0	0	\$ 0	0	0	\$ 0	0.0	0.0
All counties	87	3,806,103	43,748	\$3,037	3,890,069	44,713	\$3,664	2.2	20.6
Places:									
50,000 +	5	980,580	196,116	\$3,428	903,036	180,607	\$4,134	-7.9	20.6
25-50,000	17	559,997	32,941	\$3,659	571,999	33,647	\$4,333	2.1	18.4
10-25,000	34	514,492	15,132	\$3,286	556,228	16,359	\$3,995	8.1	21.6
1-10,000	241	701,259	2,909	\$2,952	748,336	3,105	\$3,600	6.7	22.0
Under 1,000	580	205,811	354	\$2,493	215,232	371	\$2,986	4.8	19.8
All places	877	2,962,139	3,377	\$3,269	2,994,831	3,414	\$3,931	1.1	20.3
MCDs:									
50,000 +	0	0	0	\$ 0	0	0	\$ 0	0.0	0.0
25-50,000	0	0	0	\$ 0	0	0	\$ 0	0.0	0.0
10-25,000	1	10,323	10,323	\$2,647	10,832	10,832	\$3,006	4.9	13.6
1-10,000	127	216,256	1,702	\$2,581	238,533	1,878	\$3,082	10.3	19.4
Under 1000	1,663	612,235	368	\$2,111	640,924	385	\$2,661	4.6	26.1
All MCDs	1,791	838,814	468	\$2,239	890,289	497	\$2,778	6.2	24.1

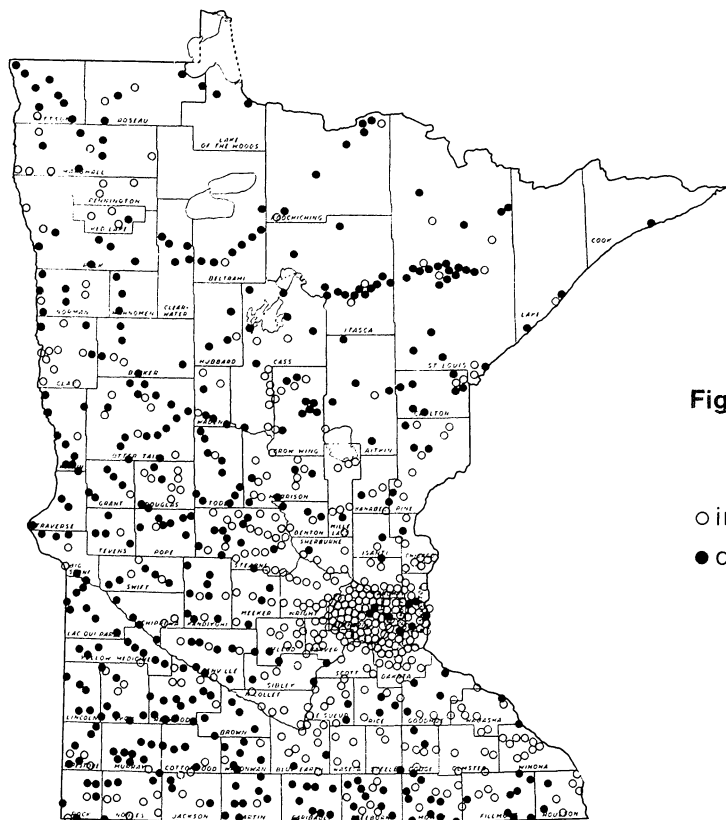


Figure 1. Minnesota population change, incorporated areas, 1960-1970

○ increase
● decrease

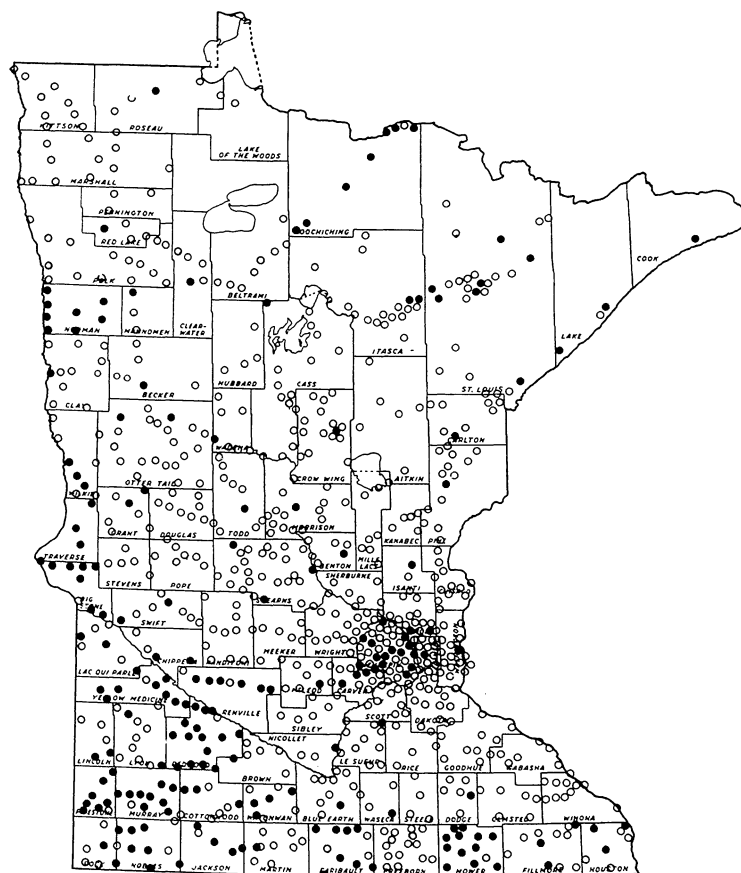


Figure 2. Minnesota population change, incorporated areas, 1970-1973

○ increase
● decrease

of 25,000-50,000, in cities with populations of 10,000-25,000, and in townships with populations of 1,000-10,000. Per capita income growth during this time was greatest in the smallest size county and city groups (1,000-10,000 population) and in townships in the under 1,000 size class. At the same time, in both 1969 and 1972, residents in cities of 25,000-50,000 enjoyed the highest levels of per capita income (\$3,659 and \$4,333, respectively), levels that are above both the Upper Midwest and national levels for residents in the same size cities.

Although this issue of *Minnesota Agricultural Economist* does not permit space for an individual analysis of each of these 17 Minnesota cities, 12 are Twin Cities suburbs, and the remaining 5 are major out-state urban centers.⁴

⁴See Minnesota Economic Data, Counties and Regions, Numbers 18 and 19, November 1970 and May 1971 for detailed 1970 population data by individual city in Minnesota.

The same data base detail for Minnesota was used for figure 2. Figure 1 is based on 1960 and 1970 Census of Population data.

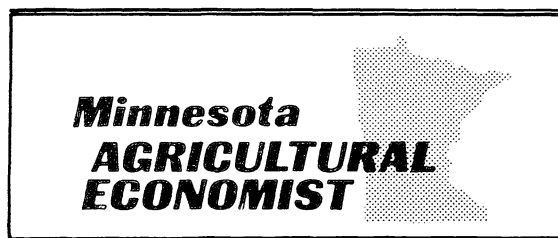
Each of the 877 cities in figure 1 is shown by a circle (O) or a solid dot (●). Cities that experienced positive population growth in the 1960-70 decade are shown as circles; those that experienced population losses are indicated by solid dots. The reader may make individual judgments about observable patterns. In general, population growth in the 1960s occurred in—or near—major urban centers.

Figure 2 is identical *except* it shows the 1970-73 estimated population change. Note that the pattern of change is drastically different from that of figure 1. A large number of cities in the Twin Cities metropolitan area are estimated to have declined in population these 3 years. A resurgence of growth seems apparent in the major out-state cities. Caution, however, is necessary in interpreting from the illustrations that all—or even most—of these cities (particularly those in

the 0-1,000 size class) are experiencing this growth. The data are estimates.

Furthermore, the Census Bureau is required by federal law to make unique estimates for each of the 39,246 political subdivisions in the United States. The Bureau, itself, says estimates for small population areas are subject to significant individual error. Much more confidence can be placed in county-level estimates. (However, publications of the Minnesota State Demographer provide current population estimates for specific geographic areas.) Figures 1 and 2 were included partly to illustrate how data, prepared for one purpose (the allocation of revenue-sharing payments to political subdivisions) may lead the reader to conclusions not warranted by the data, themselves.

Population distribution changes are clearly occurring in Minnesota. However, it may not be until after the April 1980 Census of Population that we will know just what has occurred in the small cities and townships in Minnesota.



Agricultural Extension Service
University of Minnesota

NO. 580 JUNE 1976

Agricultural Extension Service
Institute of Agriculture
University of Minnesota
St. Paul, Minnesota 55108

Roland H. Abraham, Director

Cooperative Agricultural Extension Work
Acts of May 8 and June 30, 1914

OFFICIAL BUSINESS

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Roland H. Abraham, Director of Agricultural Extension Service, University of Minnesota, St. Paul, Minnesota 55108.

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Prepared by the Agricultural Extension Service and the Department of Agricultural and Applied Economics. Views expressed herein are those of the authors, but not necessarily those of the sponsoring institutions. Address comments or suggestions to Associate Professor John J. Waelti, Department of Agricultural and Applied Economics, University of Minnesota, St. Paul, Minnesota 55108.

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