PROJECTED URBAN GROWTH in the UPPER MIDWEST: 1960-1975

By John R. Borchert
and Russell B. Adams

Urban Report Number 8  September, 1964
UPPER MIDWEST ECONOMIC STUDY

A joint undertaking of the Upper Midwest Research and Development Council and the University of Minnesota with the collaboration of the Twin Cities Metropolitan Planning Commission in the Urban Research Program.
PREFACE

This report projects population changes from 1960 to 1975 for urban areas, small towns and dispersed non-farm settlements in the Upper Midwest. Expected change is placed in the context of probable employment growth, resource development, and urban planning. The projections are based upon research findings and statistical techniques to aid business, government and education in their programs and policy formulations.

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The opinions expressed in this report are those of the authors. This report is not intended to represent the opinions of any of the groups sponsoring the UMES. The materials contained herein are preliminary and subject to revision on the basis of further research and comments received.

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Research Director
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SUMMARY

This report projects 1960-1975 changes in the non-farm population of the Upper Midwest. For each state, total populations are projected for urban areas (incorporated places of 2,500 or more plus the non-farm population of adjacent townships), small towns (incorporated places under 2,500), and dispersed non-farm settlements (excluding incorporated places and townships belonging to urban areas). In addition to these state totals, the report includes projections for each of the Upper Midwest’s 173 urban areas.

The projections indicate that trends which have been associated with the urbanization of the region over the past 30 years will persist and in some cases, intensify.

Concentration of the region’s people in urban areas is expected to continue. The projections call for urban area population to grow from 3.7 to 4.7 million between 1960 and 1975—an increase from 59 per cent to 67 per cent of the Upper Midwest total. Projections also call for a general slowdown of urban area growth rates compared with 1950-1960. Nearly two-thirds of the 173 urban areas are expected to show smaller percentage gains in the 15 years 1960-1975 than they recorded in the preceding 10 years. Growth rates will also continue to vary widely from time to time at any given city.

Dispersed non-farm population is expected to continue to grow, mainly in two types of locations: (1) the commuter zones of both the Twin Cities metropolis and smaller diversified industrial and trade centers, and (2) the lake regions. The dispersed non-farm population outside urban areas was 195,000 in 1960; it may increase to 350,000 by 1975.

Incorporated places under 2,500 are expected to drop in total population from 1.1 million to 976,000. This change follows the projected drop in farm population but is a little less precipitous. The projected loss in small town population is equal to nearly half of the 1960 population of the region’s hamlets (small trade centers with an average of 160 inhabitants), or more than one-sixth of the combined populations of hamlets and convenience centers (trade centers with an average of 900 inhabitants). There will be great variation in the extent of small town decline in different parts of the region. Expected losses represent the largest per cent of hamlet and convenience center population in North and South Dakota and Montana, where few of these places lie within commuting distance of a major center of urban employment.

These geographic shifts in population, evident in both past trends and future projections, reflect an underlying demand for urban living in pleasant surroundings, withdrawal of surplus labor from agriculture, growth of new industries and services for the national market, and development of new resources. They have been accompanied by a general rise in income. An action program which speeds this quest for economic betterment is likely to speed the urbanization process. Thus the future is likely to call for urban planning, forethought, and renewal even more than the past.

A major factor in the future economic development of the region is a quality labor, management, and entrepreneurial force which wants to live in the Upper Midwest community. The amenity of the places in which people live is therefore an important long-run economic asset. Urbanization coupled with intelligent planning for orderly growth and renewal are two important means to increase amenity in the region.
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PROJECTED URBAN GROWTH IN THE UPPER MIDWEST: 1960-1975

Previous UMES Urban Reports have described the process of urbanization in the Upper Midwest up to 1960. They have examined in detail the pattern of population shifts and the planning of urban development. The present report projects further changes in size and location of urban population to 1975. The projections are followed by a discussion of the relationship of these urban changes to the goals of both urban planning and regional economic development.

I. THE BASIS FOR PROJECTION

The following projections are based upon (a) past growth, and (b) estimates of change in trade area employment for each urban area.1 In preliminary studies of observed growth from 1950 to 1960, these two factors produced comparatively accurate predictions of the percentage rate of population change. (See Appendix for details of the projection procedure.) Additional factors were considered, but they did not significantly increase the accuracy of prediction. These included employment structure of the population, distance to competing centers, size of trade area, and value of farm production in the trade area.

Effect of Past Growth on Projections

The predictive value of past trends is to be expected. Urban Report No. 2 pointed out the tendency for population growth of a place between 1930 and 1960 "to be directly related to its size and, hence, to its previous growth," because, "in general, the larger a place was at the beginning of the automotive era, the better have been its chances to retain old functions and acquire new ones."2

Since urban areas, by definition, are over 2,500 population, they are relatively large. Hence, most of them have grown rapidly in the recent past (Table 6, UMES Urban Report No. 2). One hundred forty-seven of 167 grew faster than the region as a whole between 1930 and 1960.3 Ninety-eight of the 167 are classified as complete shopping centers or higher level centers in the trade center hierarchy; two-thirds of those grew faster than the national total population between 1930 and 1960, and nearly half grew faster than the national non-farm population.

Concentration is especially important in the larger cities and their environs (urban regions). The 30 urban regions of more than 25,000 population contained 51 per cent of the total Upper Midwest population in 1960, compared with 32 per cent in 1930. The Twin Cities urban region, alone, had 24 per cent of the total in 1960 contrasted with 17 per cent 30 years earlier.

Not all urban areas or shopping trade centers have shared in this rapid growth and concentration. There are some places where modern change has been quite different from what the past suggested. Most centers which have experienced moderate to slow growth or decline have certain types of location and economic function. They include most of the mining centers in the Lake Superior district, the Black Hills, and the Butte district; and the ore-shipping ports along Lake Superior. They also include urban areas whose main economic base has been railroading and most of the trade centers from the eastern Dakotas westward to the range country of Central Montana. In these areas, slow growth in the past depressed projected growth in the future.

Effect of Industrial Employment and Farm Income Projections

The outlook for change in manufacturing and mining employment is shown on the map in Figure 1. Gains are concentrated in manufacturing.

Principal gains appear in the Twin Cities area and the neighboring southeastern part of the Upper Midwest region. This is the "hinge area" which combines access to the Upper Midwest labor force with access to the national market to a greater degree than any other part of the region. As a result, it has shown the greatest growth of manufacturing and nationally oriented services in the past and is likely to do so in the future.4 The southern Minnesota-southeastern South Dakota portion of this hinge area also benefits from the high productivity of its agricultural land. Heavy emphasis on meat, dairy, and vegetable production has encouraged the development of processing industries, as well as a host of specialized farm service and equipment industries in the local farm trade centers.

Other manufacturing employment gains appear in the large, fast-growing wholesale-retail centers in the central and western part of the Upper Midwest and in a few smaller retail trade centers which serve areas of irrigation or relatively intensive unirrigated agriculture. Projected gains in the pulp and paper industry by 1975 are offset, within the forest region around Lake Superior, by the net loss of employment projected for the mining and ore transportation industries in the same area.

1. Jerome M. Henderson and Anne O. Krueger, Transition of the Urban Midwest Economy (speculative draft, May 1960, Ch. 1), p. 24. The past growth rates used for these projections are the per-cent-change in population from 1930 to 1960. The UMES estimated the employment change for each shopping center from 1950 to 1960 by the percentage change between 1930 and 1960 in each major function.
3. Ibid., Table 6, pp. 30-31.
4. Although these employment projections emphasize manufacturing, they are considered to reflect other types of employment oriented toward the Midwest and national market.
FIGURE 1.
CHANGE IN MANUFACTURING AND MINING EMPLOYMENT, 1960 - 1975

- Wholesale-Retail Centers
- Complete Shopping Centers
- Trade Area Boundary

Source: UMES projections for Shopping Trade Areas, Trade Areas as of 1961 (UMES Urban Report No. 3).

FIGURE 2.
CHANGE IN FARM INCOME PER SQUARE MILE, 1959 - 1975

Source: UMES projections for type-of-farming areas. Data mapped and county values interpolated. Shopping Trade Areas as of 1961 (UMES Urban Report No. 3).
Absolute increase in farm income per square mile is shown on the map in
Figure 2. This is an important source of basic income for most Upper Midwest
trade centers and the principal source for cities between western Minnesota and
the Montana Rockies. The major gain in farm income is projected in south central
Minnesota. This is the part of the Upper Midwest with the optimum combination
of rainfall, growing season, soil, and level land resources. Anticipated income
gains become smaller as one moves away from that optimum area eastward to
rouglier land and poorer soils, northward to poorer soils and shorter growing
season, and westward to lower rainfall. Other local areas of significant pro-
jected increase in farm income appear on the irrigated lands and the most
productive wheat lands of Montana.

In summary, both projected industrial employment and projected agricultural
production generally favor urban growth in the southeastern "hinge area" of the
Upper Midwest and in the larger trade centers or irrigation districts from western
Minnesota westward across Montana. Fast growth favors the same areas in
the projection process, for major locational considerations have changed
relatively little over the years.

2. PROJECTED 1975 URBAN AREA POPULATIONS
AND 1960-1975 GROWTH RATES

The Pattern of Growth

Figure 3 and Table 1 show the results of projection of 1975 populations and
interim growth rates for each Upper Midwest urban area. (The procedure is noted
above and explained in the Appendix.)

The 1975 estimates tend to be "conservative." The estimating formula
assumes that both the population and employment change in a city for any given
decade tend toward the long-time average. Thus, for a city which has recently
experienced a growth rate considerably below its long-time average, an increase
over the 1950-1960 growth rate is projected. Conversely, a city whose recent
growth rate was much above its long-time average will have a projected rate below
the 1950-1960 figure. For example, Pierre, South Dakota, and Glasgow, Montana,
had population increases during the 1950s which were far above their long-term
growth rates; and 1960-1975 growth is expected to regress toward the lower, long-
term rate. But Winona, Minnesota, whose recent growth rate has lagged behi
behind its long-term rate, is expected to grow slightly faster than it did in the 1950s.

Continued Concentration. It is apparent that concentration in the larger
cities is expected to continue at the high rate which has characterized the post-
War period. Urban areas had 52 per cent of the total Upper Midwest population
in 1950. They will have 67 per cent by 1975. The percentage rate of urbanization
is expected to be highest in the two Dakotas and Montana, although Minnesota
will continue to be the most urbanized state (Table 2). As the urban share of
each state's population continues to growth, the farm share will keep declining.
Small town and dispersed non-farm settlements, in total, are expected to hold
steady or decline slightly in their share of total population.

General Slowdown. A general slowdown is also evident. Nearly two-thirds
of the 173 urban areas are predicted to grow less rapidly from 1960 to 1975 than
they did from 1950 to 1960. The slowdown is expected to be least in Montana.
Upper Michigan urban growth rates are also expected to decline only slightly, but
they are already very low (Table 3).

One-fourth of the urban areas are likely to show little or no population gain in
the 15-year period (Table 4). These are mainly rural trade centers in weak
competitive locations or places heavily dependent upon rail or mining employment.
### Table 1

<table>
<thead>
<tr>
<th>Urban Area</th>
<th>1960 Population (000's)</th>
<th>1975 Population (000's)</th>
<th>Probable Growth Rate (%)</th>
<th>Upper Midwest Size Rank</th>
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<td>23.6</td>
<td>39/40</td>
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### Table 1 (Continued)

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<th>Urban Area</th>
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<th>1975 Population (000's)</th>
<th>Probable Growth Rate (%)</th>
<th>Upper Midwest Size Rank</th>
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<td>3.7</td>
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<td>Total</td>
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**FIGURE 3.**

GROWTH OF URBAN AREA POPULATIONS: 1960-1975
### TABLE 1.

**URBAN AREA GROWTH IN THE UPPER MIDWEST, 1960 TO 1975 (Continued)**

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<tr>
<td>Detroit</td>
<td>285,6</td>
<td>307,4</td>
<td>7.0</td>
<td>12</td>
<td>15</td>
<td>19</td>
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<td>286,2</td>
<td>7.3</td>
<td>12</td>
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<tr>
<td>Philadelphia</td>
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<td>494,0</td>
<td>4.7</td>
<td>12</td>
<td>15</td>
<td>19</td>
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</tbody>
</table>

* Population projections are subject to greater error for new towns (e.g., Silver Bay, Minneapolis), and for places which experienced a large influx connected with military or construction projects (e.g., Glasgow, Montana or Pens, South Dakota) because the prediction equation uses past relative change as a growth factor. The objective results from the prediction equations in these cases appear high but plausible.
TABLE 2.
COMPARISON OF PAST AND FUTURE URBAN AREA GROWTH RATES, BY STATES.

<table>
<thead>
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<th></th>
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<tbody>
<tr>
<td>Montana</td>
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<tr>
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<tr>
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<td>16</td>
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<tr>
<td>Minnesota</td>
<td>26</td>
<td>52</td>
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<tr>
<td>N.W. Wisconsin</td>
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<td>8</td>
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<tr>
<td>Upper Michigan</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Upper Midwest</td>
<td>60</td>
<td>113</td>
</tr>
</tbody>
</table>

They are scattered widely over the region. They tend to be small; only five are above 25,000 population. Nearly half of all the urban areas will experience moderate growth, above the regional total population increase of 11 per cent but below the regional urban increase of 26 per cent. Only 21 urban areas are expected to exceed the Upper Midwest urban growth rate but their growth will be very fast. Twenty of the 21 are likely to outstrip the national urban increase of 32 per cent.

TABLE 3.

<table>
<thead>
<tr>
<th>State</th>
<th>In Urban Areas</th>
<th>Small Towns and Dispersed Non-Farm*</th>
<th>On Farms*</th>
</tr>
</thead>
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<tr>
<td>Montana</td>
<td>54 59 69 23 19</td>
<td>23 16 12</td>
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<tr>
<td>North Dakota</td>
<td>29 38 48 30 25</td>
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<tr>
<td>South Dakota</td>
<td>35 42 34 26 21</td>
<td>39 25</td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>62 69 75 35 14</td>
<td>25 11</td>
<td></td>
</tr>
<tr>
<td>N.W. Wisconsin</td>
<td>39 43 47 28 33</td>
<td>33 24 14</td>
<td></td>
</tr>
<tr>
<td>Upper Michigan</td>
<td>64 68 70 26 27</td>
<td>10 6 3</td>
<td></td>
</tr>
<tr>
<td>Upper Midwest</td>
<td>52 59 67 20 21</td>
<td>28 20 14</td>
<td></td>
</tr>
</tbody>
</table>

* For definitions and derivation, see footnote to Table 5.

The fast and very fast growing places are generally already large. They include most of the wholesale-retail and shopping trade centers. Their rapid growth rates further emphasize the trend toward urban concentration of the region’s people.

The Unexpected is Inevitable

Earlier UMES research showed that growth is characteristically unsteady. New economic activity often comes to a community in sizeable increments, and these "lightning strikes" tend to be infrequent and irregular.

There is, of course, no way to anticipate relatively large and sudden changes in growth rate at any specific location. Consequently, while most of the projections in Table 1 will have small errors, a few may be expected to have relatively large errors.

Because the specific location of "lightning strikes" cannot be foreseen, the median projections in Table 1 are only probable values. In two-thirds of the cases, the actual population in 1975 may be expected to fall within 7 per cent of the probable projection. For example, among urban areas with projected 1975 populations of 10,000 about two-thirds will have populations between 9,300 and 10,700. Ninety-five per cent will fall within 15 per cent of the probable projection--between 8,500 and 11,500.

Thus, three projected 1975 populations and growth rates--low, median and high--are given for each urban area (Table 1). The high and low values indicate outside levels of change which might be expected in the event of either major economic increment or loss.

Factors Favoring High Growth Rate Estimates

Plausible developments could cause 1960-1975 growth rates to approach the high-level projections in certain urban areas. Other UMES reports have suggested these developments. It is useful to review them and identify the urban centers and trade areas which would be most directly affected. But it must be emphasized again that nothing precludes an economic "lightning strike" at any city on the map, whether or not it is one of these.

Accelerated growth of machinery industries. Employment growth in excess of UMES neutral projections is most likely in industries and locations which have a comparative advantage in the Upper Midwest.6

UMES reports have shown that all states in the region have a comparative advantage for the manufacture of non-electrical machinery (including electronics and instruments) for the national market.7 Thus, they have the prospect of increasing their share of this fast-growing sector of the nation's industry. These reports also indicate a comparative advantage for the broad group of electrical machinery industries in the three states which include the southeastern "hinge area"--South Dakota, Minnesota and Wisconsin.8 Manufacturing employment growth between 1950 and 1960 in Minnesota and South Dakota exceeded the national percentage growth rate.9

Thus, it appears that if manufacturing growth exceeds the neutral projections in the categories not linked to local natural resources, it is most likely to do so in the machinery industries, including instruments and electronics. The geographical location of such growth, while it may be scattered to some extent among cities throughout the Upper Midwest, is likely to be most heavily concentrated in the southeastern area, where there is relatively high accessibility to the national market, and in the larger urban centers, where neutral projections already indicate substantial growth rates in manufacturing employment (Figure 1).

Whatever is said about employment in manufacturing might well be repeated for employment in other activities which are oriented toward the national market. Examples are insurance, advertising, or general offices. Indeed, these service activities will be more important employers than manufacturing if present trends persist.

6. James M. Henderson and Anne O. Krueger, Transition of the Upper Midwest Economy (Preliminary draft, May 1964), Ch. 5, pp. 1-5.
8. Ibid.
9. Ibid., Table 7.

Accelerated resource development. Development or utilization of local natural resources may well exceed the rates implied by UMES neutral projections in certain areas. Such acceleration would result from either more intensive exploitation of an existing comparative advantage or a change in the timing of a program which is contemplated but not definitely scheduled. In those areas the 1960-1975 urban growth rates would tend toward the high estimate. The following cases are suggested:

A. Forest resources provide the northeastern part of the Upper Midwest with a comparative economic advantage in the pulp and paper industry. UMES neutral projections anticipate an increase of more than 5,000 jobs in that industry within the region by 1975.10 Increasingly aggressive marketing, research leading to greater use of hardwoods in pulp production, and revision of forest ownership, marketing, or management could accelerate this growth.11

Urban centers and trade areas which would be affected are shown in Figure 4.

The Montana Rockies also have a comparative advantage in forest industries. UMES projections indicate 1960-1975 growth of lumbering. However, this growth is closely tied to the size and quality of the existing natural resource; hence, there is less opportunity to exceed the neutral projection rate of employment growth.

B. Recreational development could accelerate if there are successful efforts to increase the rate of investment in seasonal homes and high-grade facilities.12 Estimates indicate that the average summer dwelling generates about $500 annual retail trade in its local area. This is about 10 to 12 per cent of the expenditure from a year-around household. Thus, 8 or 10 seasonal dwellings produce annual expenditures in their local area equivalent to that provided by one average year-around job. The 1950-1960 decade saw 50 thousand new seasonal homes erected in the recreational areas of northeastern Minnesota, northern Wisconsin, Upper Michigan and western Montana. Their estimated economic impact equals that of 6,100 new full-time jobs in the local areas affected. To the extent that these dwellings are built by people from other parts of the nation, they represent basic income for the regions as well as for the locality where they are built.

More than 20 urban centers and trade areas would feel the main effect of accelerated recreational development. They are located in the lake regions, Black Hills, Montana Rockies, and along the new Missouri River reservoirs (Figure 5).
FIGURE 4.
PRINCIPAL FOREST AREAS AND WATER RESOURCE AREAS OF THE UPPER MIDWEST

FIGURE 5.
PRINCIPAL OUTDOOR RECREATIONAL AREAS IN THE UPPER MIDWEST

Number of Seasonal Homes
Per County, 1960
- 4,000 - 7,999
- 2,000 - 3,999
- 1,000 - 1,999
- 500 - 999
C. Missouri River diversion projects are proposed to irrigate 750,000 acres in North and South Dakota. They would draw water from the Garrison and Oahe reservoirs (Figure 4). If these programs are carried out, they could raise the level of farm income in parts of central and eastern North and South Dakota to the present level in western Minnesota. 13

The urban impact could double the size of existing shopping trade centers or, in any case, double their employment and stabilize or increase the population of neighboring small towns and countryside through increased commutation and suburbanization. The ultimate development would lie mainly within six shopping trade areas: Minot, Devils Lake, Jamestown, Aberdeen, Huron, and Mitchell (Figure 4).

If the project were to begin very soon, it is possible that a small part of the impact of conversion to intensive irrigation agriculture would occur by 1975. Meanwhile, temporary urban growth would result from the construction activity.

Expansion of trade and service areas. Most urban centers have increased their trade area penetration since 1930, and this trend has not yet run its course. 14 Of course, this produces no regional growth, only an internal shift. But there are two ways in which the process may also add to the wealth and resources of the region.

A. Consolidation of urban resources in comparatively large and diversified centers could help to generate, attract, and hold basic economic activities which would not otherwise be generated or held in the region. This obviously has been one result of the consolidation of regional metropolitan activities at the Twin Cities. A similar process may well be emerging at Fargo, Sioux Falls, Billings, other fast-growing wholesale-retail centers, and smaller sub-regional centers.

B. Expansion of the metropolitan service territory of the Twin Cities may be a significant possibility in two areas: northern Iowa and the upper Wisconsin River valley. 15 These areas were generally more accessible to Chicago-Milwaukee than they were to Minneapolis-St. Paul in the railroad era. This is reversed in the automobile-trucking era. The areas might be provided with certain metropolitan services from the Twin Cities to the advantage of all concerned.

They were excluded from UMES analyses because they are outside the Ninth Federal Reserve District, but they should not be excluded from future consideration. The two areas combined have a population and personal income larger than the state of North Dakota.

Factors Inducing Low Growth Rates

Urban growth rates are most likely to fall below the median estimates of Table 1 in cities which specialize in lagging sectors of the economy. UMES neutral projections indicate an employment decline in the grain milling industry and lagging employment growth in the dairy processing industry. 16 (Meat packing in North Dakota and Montana are exceptions; strong percentage gains are expected there.)

These trends will be important mainly in centers whose past growth and present size has depended heavily on employment in the farm produce processing industries. Most of these centers are in the southeastern hinge area, and the lag in food industry employment growth may partly offset gains in machine industry employment in some cities in that part of the region.

13. Ibid., p. 19.
15. Ibid., Figure 8, p. 25. The three northern tiers of counties west of Waterloo, Iowa, and six Wisconsin counties east-northeast of Eau Claire.
16. James M. Henderson and Ansel G. Reeser, Transition of the Upper Midwest Economies (preliminary draft, May 1964), Ch. 4, Table 2, pp. 11-13.
3. THE SMALL TOWN AND DISPERSED NON-FARM POPULATION OUTLOOK

Populations have been projected independently for the states, urban areas, and farms of the Upper Midwest. The urban area and farm projections were subtracted from the state totals. The difference between these two figures equals the combined populations of small towns under 2,500 and the dispersed non-farm dwellings outside urban areas. These latter two components can also be separated. Tables 5, 6, and 7 show the 1975 populations and 1960-1975 growth rates thus obtained for small towns and dispersed non-farm areas.

The projections indicate that the major trends of recent decades are likely to run even stronger during the next 15 years. Virtually all net growth will be concentrated in the region's 173 urban areas (Table 3). Half the growth will be at the Twin Cities alone. The urban area growth rate for the region is projected at 26 percent, with only Upper Michigan and northwest Wisconsin cities lagging.

Outside these urban areas, continued rapid growth is anticipated in the dispersed non-farm population. These are people who dwell within major urban regions (see Urban Report Number 2, p. 27) but not in the townships immediately adjoining the central city. They live in the outer reaches of the principal urban commuter areas or in the lake districts. Their numbers are expected to increase by 79 per cent between 1960 and 1975; but they will still comprise only about 350,000 persons, compared with more than 4.7 million in the urban areas.

Of course, those 350,000 will be only a part of the urban population dispersed outside city limits. UMES urban areas include the townships adjoining the central cities. Unless development trends change or municipal boundaries become more flexible, these townships are likely to contain as much as 10 per cent of the total urban area population—perhaps 450,000 people. Thus, the total non-farm population in the unincorporated countryside, within urban regions around major cities and the lake districts, could reach or surpass 800,000 by 1975.

The projected extent of these urban regions is shown in Figure 7. It is interesting to compare that map with the map of 1960 urban regions in UMES Urban Report No. 2 (Figure 14). The expansion is chiefly in central and southeastern Minnesota.

The Small Towns

Meanwhile, in cities and villages of less than 2,500 population, the anticipated net change is sharply downward in Michigan and the three western states and almost static in Minnesota and northwest Wisconsin. It is probable that a more detailed geographical analysis would show a slight net gain for the small towns in eastern Minnesota offset by a net loss for those in the

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<table>
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</thead>
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<td>Incorporated Places</td>
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<tr>
<td>Outside Urban Areas</td>
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<table>
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<th></th>
<th></th>
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</thead>
<tbody>
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<td>Minnesota</td>
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<td>-5</td>
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<td>N.W. Wisconsin</td>
<td>+7</td>
<td>+5</td>
</tr>
<tr>
<td>Upper Michigan</td>
<td>-7</td>
<td>-15</td>
</tr>
<tr>
<td>Upper Midwest</td>
<td>-133</td>
<td>-12</td>
</tr>
</tbody>
</table>

---

**TABLE 7. POPULATION CHANGE, 1960-1975, BY STATES: SMALL TOWNS COMPARED WITH DISPERSED NON-FARM SETTLEMENTS**

<table>
<thead>
<tr>
<th>State</th>
<th>Incorporated Places</th>
<th>Dispersed Non-Farm</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<td>+30</td>
</tr>
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<tr>
<td>N.W. Wisconsin</td>
<td>+7</td>
<td>+5</td>
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<tr>
<td>Upper Michigan</td>
<td>-7</td>
<td>-15</td>
<td>+24</td>
</tr>
<tr>
<td>Upper Midwest</td>
<td>-133</td>
<td>-12</td>
<td>+155</td>
</tr>
</tbody>
</table>

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17 Ibid., Ch 2, Table 3 (Stata); Ch, 4, Table 8 (Farms; see footnote to Table 3 for derivation of farm population from number of farms; see above for urban area projections.)

18 The dispersed population for 1960 was obtained from the basic data for UMES Urban Report No. 2. It was projected to 1975 at the same absolute rate which prevailed from 1960 to 1963. This component was then subtracted from the small town dispersed total; and the remaining figure is the population of cities and villages under 2,500.
western, mainly agricultural part of the state. The greatest losses in small
town population are indicated for the almost purely agricultural areas from
western Minnesota to the Rocky Mountains.

The net loss projected for the small towns in 15 years is 133,000. The
1,820 hamlets of the Upper Midwest had a total population of about 275,000
in 1960. The 489 convenience centers were the home of approximately 500,000
people. Thus, the projected net loss is equal to nearly half the population
of the region's hamlets, or more than one-sixth of the population of the
convenience centers and hamlets combined. There is much variation between
different parts of the region. The projected loss in Montana, North and
South Dakota is equal to about 87 per cent of the total hamlet population in
1960; in Minnesota it is equal to only 20 per cent.

Even those small towns which have a population increase within the town
are likely to experience a net population loss within their trade areas. This
will result from population losses in the neighboring hamlets and on the
surrounding farms which exceed the gain in the trade center itself.

This trend is particularly common in the parts of the region in which farm
population is a major component. Those areas include western Minnesota,
western Wisconsin, North and South Dakota except for the Black Hills, and
Montana east of the Rocky Mountains. In those heavily agricultural parts of
the Upper Midwest most partial shopping centers and convenience centers will
have a net loss of people living in their trade areas notwithstanding small
gains within the centers themselves. Even the complete shopping centers in
these parts of the region will generally experience trade area population losses
where the centers themselves do not grow at least 20 to 30 per cent between
1960 and 1975.

This trend was already in evidence between 1950 and 1960. Despite
generally rapid growth in each major urban center, there were net population
losses in the shopping trade areas of two complete shopping centers in the
Montana wheat and ranching country, six in North Dakota, seven in South
Dakota, 13 in out-state Minnesota, and in the agricultural part of western
Wisconsin. There is every indication that this trend will continue.

FIGURE 6
URBAN CENTERS AND REGIONS OF THE UPPER MIDWEST, 1975
If these figures are realistic, the populations and business of many hamlets and convenience centers will be decimated in the next 15 years. These places will contain a total of 40,000 or 50,000 vacant dwelling units and several thousand vacant commercial buildings. The only future for most of the buildings will be demolition and they will likely be the tax forfeit property of impoverished local governments. New uses other than agriculture or forestry are unlikely for the land most of these structures occupy. An extension to these places of the present practice of public land clearance in blighted areas may be in order.21

More important is the fact that all small towns obviously will not decline. At least half of the convenience and partial shopping centers will grow or, at least, persist at about their present size. Some of these are rural trade centers whose business districts will have to be maintained and modernized. They generally enjoy locations relatively isolated from competing larger centers. Others, especially in southeastern Minnesota and western Wisconsin, will continue their metamorphosis to low-cost "dormitory" suburbs of neighboring larger cities; and they will survive or grow with that function.22

The specific communities which will persist and those which will decline are already evident to many people in their local areas. The basic locational factors are now generally apparent, and the trends are running.

Forthright comparisons, appraisals, and discussions will assure the development of modern, conveniently located small-town business, professional, educational and government services at appropriate places.

Projections such as these are tenuous, of course. At best, they are aggregate values. The tables of state figures do not foretell the future of any individual community. Still a general picture emerges which is difficult to dispute. The region's population is going to live in fewer, larger, and more widely dispersed urban communities.

This inexorable urbanization has important implications for any regional economic development program. Those are discussed in the concluding section which follows.


4. REGIONAL DEVELOPMENT GOALS AND URBAN CHANGE

Recent Trends

UMES Urban Reports have stressed four basic elements in the shifting pattern of population. These are the essential changes which have occurred since 1930; and they are also projected to 1975. They are:

1. Centralization--concentration of an increasing proportion of the work force and their dependents at major centers or within commuting range of those centers.

2. Dispersal--location of an increasing proportion of non-farm homes, both year-around and seasonal, in scattered countryside settlements around principal cities, in the lake districts, or in other scenic areas.

3. Relative growth of the southeastern part of the region--comparatively high holding power and immigration in the "hinge" area which combines access to the human resources of the region with access to the mid-western and national markets.

4. Sporadic growth of specialized cities or project locations--population and employment gains, past and projected, at the major pulp and paper, taconite centers, and sites of military or major construction projects.

These geographic shifts of population reflect an underlying quest for amenity and economic betterment on the part of individuals and firms. They reflect the demand for urban services in pleasant surroundings, withdrawal of surplus labor from agriculture, development of new industries and services for the national market, and development of new natural resources within the region.

Progress Toward Regional Goals

These changes also reflect progress toward certain goals of the Upper Midwest Research and Development Council. For they have been accompanied by a general rise in real income and level of living.23

23. James M. Henderson and Anne O. Krueger, Transition of the Upper Midwest Economies (preliminary draft, May 1964), Ch. 7, Table 7.
The council’s action, of course, aims at not just progress toward these goals but accelerated progress—faster increase in non-farm jobs and faster growth of per-capita income. The summary report of the UMES research director cites many lines of action along which Upper Midwest leaders might attempt to achieve this goal of accelerated economic progress.24 There will be specific courses of action recommended for many communities throughout the region in the coming years.25

If these action programs succeed, they can be expected to intensify the geographic shifts in population which have characterized the last 30 years. Therefore, they will lead toward further urbanization, further industrialization in the relatively attractive areas, and further development of natural resources.

Thus, if past developments have called for community planning and forethought, the success of future action programs will call for still more. Furthermore, community planning may be essential to the success of the action programs for the following reasons.

The Importance of Human Resources

UMES studies have pointed out repeatedly the importance of human resources for economic development.26 In the Upper Midwest, as in the nation generally, natural resources continue to decline as a basis for employing and holding people in any particular locale.

But human resources are highly mobile. They can move with comparative speed from one region to another. In recent decades, American people have been concentrating relatively rapidly in places with comparatively great accessibility to market or amenity of living.27 The Upper Midwest, in varying degrees, has a transportation disadvantage to the national market. UMES and other studies have also pointed this out repeatedly.28 Many industries and national services which absorb this cost are “footloose” activities which might, in theory, be located almost anywhere.

In the last analysis, it appears that a very important economic location factor in the Upper Midwest must be not only the fact that these people are here but also the fact that a significant number of them want to make their homes in the Upper Midwest community. There is a basic premise that the region is indeed a community—that the people of the region constitute a resource that would in part, at least, be lost if the community were to be dissipated.

This must be increasingly true throughout all parts of the United States, as distinctive local mineral and agricultural resources decline in population holding power and urban concentration continues. Commitment to the regional community on the part of labor force, entrepreneurs, and investors is essential. Without this commitment a program to accelerate development of a particular region, based upon its human resource, has little meaning.

The Importance of Regional Amenity

In this scheme the amenity of the communities to which people live becomes a matter of primary importance to economic life and growth.

There are many components of community amenity. They include the social surroundings as well as the physical. UMES urban studies have concentrated on two components which are very important, though only part of the picture.

1. Centers of cultural, commercial, professional and personal services.
2. Residential sites and locations.

The urban reports also point up means to increase these components of community amenity: population shifts and community planning.

Increasing Amenity Through Urbanization

The massive population shifts within the region have increased amenity first by increasing total and per-capita income. But they have simultaneously strengthened major urban centers.29

Urbanization has provided opportunity for more diverse facilities, services and cultural and recreational attractions. The new opportunities are illustrated not only by increased cultural attractions, sports, or professional and shopping services at the region’s metropolitan center in the Twin Cities but also by new medical, educational, recreational, shopping and other facilities resulting from concentration at the principal smaller cities.

24. Ibid., especially Ch. 2.
25. For example, Development Planning Associates, A Development Plan for Billings, Montana: San Francisco, 1963 (for the Billings Chamber of Commerce).
28. Dean W. Henderson and Anne O. Kroeger, Transition of the Upper Midwest Economies (penultimate draft, May 1960), Ch. 8, p. 21. Ch. 9, pp. 12, 12; Ronald S. Wonnacott, Marketing Costs and the Comparative Advantage of United States Regions, UMES Study No. 1, 1963 (also Business Research Committee, Educational Location and the Minnesota Economy, University of Minnesota School of Business Administration, 1954, p. 5).
Increasing Amenity Through Community Planning

Rapid urbanization has opened opportunities and needs for community planning. Of course, no community is literally unplanned. It is built by groups and individuals, each with plans and expectations. Yet the mixture of these plans has sometimes produced disorder in Upper Midwest cities. And the disorder has been accompanied by missed opportunities for amenity, needless expense, and even hardship.30

The question is how to create the most possible community order from the multitude of individual plans and actions. In a free society no agency, public or private, can plan unilaterally all of the actions which go into building and maintaining a city. Evidence is lacking that this could be done in any case. Therefore, a community plan must evolve through the exchange and use of information.

Exchange of Information. UMES Urban Report No. 4 emphasizes the importance of information and communication in the community planning process.31 The information falls into three main classes:

1. Special information about plans and impending actions which will alter the fact of the community. Those who are planning changes need to know of the related plans of others. This enhances the possibility of seeing mutual problems and opportunities which would otherwise be missed. Studies and hearings of the planning commission provide the setting for this exchange of information.

2. Technical information about the means of guiding and regulating development which are in use in other communities. Studies by the commission and its staff provide this kind of information.

3. General information to provide background necessary for public discussion and action. This includes knowledge of the history, geography, economy, and government of the community, both in general and as it pertains to specific problems. Here the schools, as well as adult education programs and service organizations, can make the major contribution.

The Role of the Planning Commission. A local planning commission plays a critical role in the diffusion of special and technical information. The infor-

mation is turned up through commission studies and hearings. Through its studies, the commission keeps itself and others abreast of land-use changes in the community. Through its hearings, all concerned are informed and have the opportunity to fit individual plans into a community plan.

UMES urban research has also emphasized the importance of a formal and practical working relationship of the planning commission with an elected official body which makes decisions concerning the building of public improvements, the regulation of private building and subdivision, and the zoning of land. Staff help is necessary where the studies and the technical information needed are too complex to be handled by a voluntary citizen group alone. This is most likely to be the case in urbanizing counties and in cities over 5,000 to 10,000 population, but the need also arises occasionally in smaller places or in other levels of local government.

The Jobs to Be Done. Community planning faces three important tasks associated with urbanization and population shifts.

1. Promotion of more orderly growth in the built-up areas of the principal cities of the region. The most common problems in recent years have included the development of thoroughfares, provision of adequate parking and coordinated planning of new building in downtown areas, anticipation of probable future needs for public utilities, and design of new subdivisions and outlying business centers according to modern standards.32

2. Accelerated urban renewal. UMES Urban Report No. 5 has emphasized the likelihood of increased urban renewal activity nationally in the next two decades.33 To keep abreast of the national trend, it will be necessary to raise further the level of maintenance, demolition, and replacement of buildings. The major needs for accelerated renewal or clearance are in the older central areas of medium-size and large cities, in isolated pockets within medium-size cities, and throughout many declining small communities. In some cases there is no foreseeable need for new building. The need is simply to clear away the unused debris of a bygone era for the provision of parking or the restoration of scenery.

3. Conservation of the natural amenity of the countryside. Urban Report No. 7 emphasizes the importance of scenery and open space in dispersed
non-farm residential development. These amenities are important to conserve because they attract outside capital for both seasonal and year-around residential development, and they also attract visitors. In certain areas of rapidly-growing dispersed non-farm population, local "rural" planning and zoning are needed to protect the natural advantages of the area through more orderly development.  

**The Organizational Framework.** Organizations for planning and renewal may be established as arms of the elected body of officials in a municipality, township, county or state within the Upper Midwest. Urban Report No. 2 shows the extent to which planning commissions have been established by municipalities and counties. Except for Wisconsin, state planning organizations are hardly developed and renewal programs exist in only a handful of places outside the Twin Cities.

While it is essential that a planning commission be linked to the elected body of officials of one of these levels of government, it is also necessary for the different governments to cooperate in planning efforts. Urban Report No. 2 showed the extent to which growing urban areas are transcending municipal, county, and even state boundaries. Urban Report No. 4 cited cases in which costly disorder resulted from failure or inability of officials in adjacent local governments to cooperate in planning for development of a single urban area. Orderly community growth cannot be achieved without cooperation among units of local governments.

**Financing.** In any discussion of community improvement, the question arises: "What will it cost in taxes?"

It is important to distinguish between the cost of planning and the cost of actual improvements. For example, the national total cost of municipal planning in 1962 was less than seven hundredths of one per cent of the expenditures for public improvements, residential, and non-residential construction in urban areas during the preceding year. Furthermore, planning can produce savings which compensate to some degree for the expenditure.

The cost of actually constructing and maintaining urban facilities is, of course, much greater. UMES urban research indicated that per-capita municipal capital outlay (excluding education) in an average Upper Midwest city between 1946 and 1960 equalled about one per cent of per-capita income. Municipal expenditures (excluding education) for both current and capital items were approximately 4.5 per cent of personal income on a per-capita basis.

However, these expenditure rates vary considerably from one city to another. It is common for a community to have per-capita total expenditures which average, over a decade, 25 per cent above or below those of a neighboring community. These differences are explained partly by differences in size, growth rates, personal income, property tax base, and other measurable characteristics of the cities. But in general this explanation is quite incomplete. About one-third of these variations in capital and current expenditures are apparently the result of unmeasured differences in local standards and choice. Another study showed physical deterioration in small and medium-size towns to be poorly related to income.

Thus, the cost is negligible to plan what is going to be built in a community anyway. And the amount to be spent on community public improvements apparently depends in significant part not only upon the absolute wealth of the community but also upon the standards and priorities of its people.


APPENDIX

METHOD FOR ESTIMATING 1975 URBAN AREA POPULATIONS

The 1975 population forecasts and their derived values given in Tables 1 through 7 were computed by regression analysis and trend extrapolation. The objective is to provide specific estimates, along with ranges of expected (probable) error, for urban areas and for components of state populations by settlement types in the Upper Midwest. Evaluation and adjustment of these forecasts should be made in light of forthcoming developments and the 1970 United States census results. Assumption of a linear growth trend between 1960 and 1975 is suggested for comparative purposes. This procedure describes the method followed in forecasting populations for the 173 urban areas whose central cities are expected to exceed 2,500 persons (Table 1) by 1975.

A. Investigation of Predictor Variables

The percentage change of urban area population was selected as the dependent variable, $X_1$, after absolute change was noted to be highly unstable because of the excessive range of population sizes. The 1950-1960 decade was used as the test period to evaluate the effects of independent variables upon $X_1$.

Linear extrapolations were made, scattergrams were prepared, and bivariate correlation coefficients were computed for trial samples of the relationships between population growth and previous or concurrent change in other variables. Missing or non-comparable data frequently precluded a complete test for all urban areas. The following series of steps were taken:

1. Extrapolation of individual township populations to 1975—farm and non-farm components separately—by averaging short-run (1950-1960) and long-run (1930-1960) trends. This framework provided a projected settlement map and an over-all control on urban area growth, assuming a continuation of past trends.

2. Testing of 1950-1960 urban place growth for ten selected variables to determine approximate degrees of relationships. Variables examined and results obtained were:
   a. Population size in 1950; the rank correlation equalled -.02, so no relationship was concluded.
   b. Per cent of the urban area labor force in professional occupations in public administration, and in trade; the correlation coefficients were low ($r'$s less than ±.20). The assumption had been that employment in these sectors would continue to concentrate.
   c. Travel distance to the nearest center at the same level of the trade hierarchy: the assumption was that isolation strengthens shopping activity. Mean growth rates of centers by distance classes revealed no apparent relationship.
   d. Refinements of 2(c) above: use of travel distance to nearest higher-level center in the hierarchy and to the nearest larger town, regardless of level; and the population ratio of the center to its nearest neighbor's population. Statistical results were not encouraging, but mapping revealed three "regional" strata of growth rates: 1) The northwoods-western Montana area; 2) The cash grain-ranching area of the western Dakotas and Montana; and, 3) The corn-dairy area of Minnesota and western Wisconsin. The implied separate analysis and prediction led to increased correlation coefficients, although none of them were over .40.
   e. Aggregate gross farm income in the trade area in 1950, and its 1950-1960 per cent change. The assumption of urban area growth associated with this variable was not substantiated on the basis of map study and mean changes by income groups.
   f. Square miles and population in the trade area. Neither variable displayed useful predictive ability.
The generally negative results of these individual relationships led to comprehensive testing by multiple regression of variables whose data were known to be available for prediction of urban area growth.


a. Per cent change in non-farm population, 1930-1950--i.e., 20-year growth rate prior to test period, or past performance (X2). \( r_{12} = .34 \), for all (160) urban areas; deletion of highly-deviate cases (military bases and construction sites) raised the correlation only slightly, but reduced the standard error of estimate from 18.5% to 10.4%. World War II effects were noted for a number of towns.

b. Per cent change from 1950 to 1960 in "basic employment," defined as construction, mining, manufacturing, public administration, transportation, communications and public utilities; labelled concurrent job change (X3). A 50% sample was used for employment in the county of the urban area, or the central city, according to data availability. The correlation coefficient, \( r_{x1x2} \), equaled .45; definite city-types by dominant employment sectors and regions emerged.

c. Cases of extreme departure from expected growth on the basis of past performance, concurrent job change, or both, were explainable in terms of special activity. Generally, very rapid growth was under-predicted because of a newly-constructed military base, a nearby dam project, or an employment "lightning strike." Similarly, slower-than-expected growth from 1950 to 1960 was generally attributable to unusual growth conditions prior to 1950.

B. The Regression Equation

The joint effects of past performance, 1930-1950, and concurrent job change, 1950-1960, upon population change yielded the following equation for 83 randomly-selected urban areas:

\[
X_1 = 5.0 + .104X_2 + .418X_3
\]

where:

\( X_1 \) = percent change in urban area population, 1950-1960
\( X_2 \) = percent change in urban area population, 1930-1950
\( X_3 \) = percent change in "basic employment", 1950-1960

\( r_{123} = .74; \text{S.E. est.} = 7.7\%

Because of high inter-correlations of \( X_2 \) and \( X_3 \) with variables previously investigated (see A-2 above), this prediction equation was judged to be as accurate as could be obtained with a manageable number of variables. Also, stratification by sub-areas or city-types was deemed to be questionable with respect to future growth. The above equation gives 10-year growth rates with a constant of 5.0%. About 55% of the growth is "explained", and the 95% confidence interval gives a range of approximately 15% on either side of the estimate. Both coefficients of \( X_2 \) and \( X_3 \) were highly significant (N=83).

C. The Forecast

Application of the multiple regression equation to 1975 forecasts was carried out as follows:


Non-farm populations for the same set of towns and townships used in developing the prediction equation were computed for 1940 and 1960 with the per cent change used for \( X_2 \) (see UMES Urban Report No. 2).

Estimation of 1960 to 1970 relative growth in "basic employment" (X3).

a. Trade area employment estimates for 1975 by nine sectors, for complete shopping centers were obtained from the Upper
b. UMES employment sectors were selected to match the "basic employment" categories used in the regression equation (Part B, above), "military," "trade," and "services" categories were excluded; "agriculture," "mining," "manufacturing," "construction," and "unemployed" were included (see ibid., Chapter 1, p. 22).

c. Each shopping trade area contains at least one urban area. The urban area's share of trade area "basic employment" was determined for 1930, 1940, 1950 and 1960 and extrapolated to 1975. The 1950-1960 change was given additional weight in the extrapolation because of the increasing concentration of employment growth in urban areas. The 1975 urban area share was multiplied by the UMES 1975 "basic employment" estimate for each trade area.

d. This estimated 1960-1975 increase in "basic employment" was then converted to a percentage, \( X_3 \).

3. Computation of 1960 to 1975 per cent growth (\( X_1 \));

a. Substitution of \( X_2 \) and \( X_3 \) in the regression equation.
(Note: The equation forecasts a 5% population increase for 10 years for urban areas with zero past growth and concurrent job change.)

b. Multiplication of the equation result by 1.5 to produce the 15-year, 1960 to 1975, increment. This assumes the growth percentage is linear throughout the period. The six SMSA populations for 1975 were forecasted by adding separately-projected components outside their urban areas.

c. Application of the estimated per cent growth to the 1960 population for each urban area to obtain the 1975 estimate.

4. Setting the "High" and "Low" values (Table 1).

The standard error of 7.7% was applied to \( X_1 \), assuming no greater error for the 15-year forecast than for one to 10 years. Size ranks for 1975 and 1960 populations are given in Table 1 for the probable change in relative regional standing.

5. The projected 1975 urban area populations were found to yield reasonable extensions of their shares of state and regional populations from 1930 to 1960, thus strengthening their credibility. 1975 estimates were subsequently applied in the distribution of other components of state populations in Table 2 through 7.

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