

Changes in Retail Sales, Population, and Pull Factors, 1980 and 1986; Summary of County, City, and Trade Area Characteristics

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A drive down main street in many North Dakota cities reveals many vacant stores, marginally profitable businesses, and decaying buildings. Although this condition is the result of a long-term trend, the stressful times of the 1980s have accentuated and speeded the process of rural decline.

Businesses in these rural communities have been linked with agricultural production activities for many years. Research indicates an increase in retail activity during the 1970s "farm boom" (Stone, 1987; Coon and Leistritz, 1987), but since 1980 this trend appears to have reversed. Decreased farm population, the farm financial crisis, and a sharp drop in energy activity have been identified as the most obvious causes of decline in rural communities' retail activity (Leistritz et al., 1987; Stone, 1987).

In addition, relative income levels, population characteristics, improved transportation, and changing consumer tastes and buying preferences have influenced retail sales activity. These elements have contributed to changing trade patterns over time and across geographic regions.

This summary is part of a project initiated in Indiana, Iowa, and North Dakota to (1) identify communities that have successful ongoing programs to improve their retail business districts and (2) determine the characteristics that distinguish them from less successful communities. The intent of this phase of the research was to compile data and summarize recent changes in population, taxable sales (taxable sales and taxable purchases), and market share and to derive pull factors for communities in North Dakota having a previously completed trade area study.

Communities with a 1980 population over 200 (199 such communities) were divided into six population size groups and examined for the years 1980 through 1986. Counties also were summarized geographically by the eight state planning regions. Secondary data from the North Dakota Tax Department and the U.S. Bureau of the Census were used for the analysis.

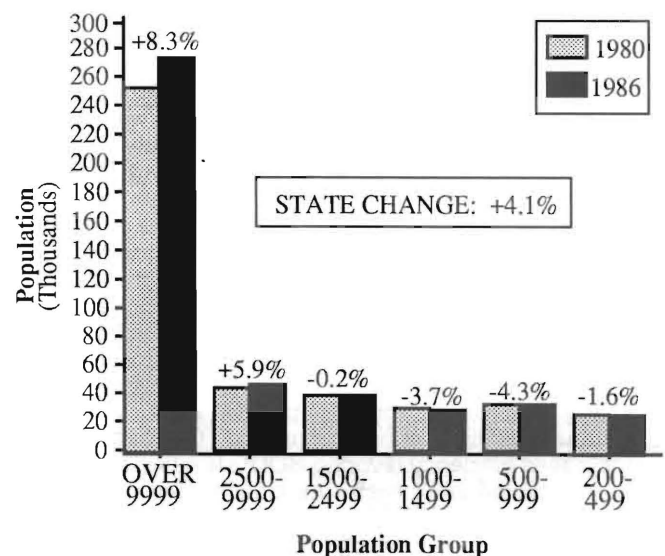
This summary is organized in two major sections. First, population, taxable sales, pull factors, and market shares are discussed for cities in six population size groups. Then the same attributes (except pull factors) are summarized by state planning region.

POPULATION CHANGES

Migration from rural areas and small towns to larger urban cities is a trend that has been occurring for some time. In 1950 only about 19 percent of North Dakota residents lived in cities with populations over 10,000, but by 1986 over 40 percent lived in such cities. From another perspective, half the state's residents lived on farms or in cities with less than 200 population in 1950, but by 1986 this proportion had decreased to less than one-third.

Nine cities in North Dakota had a population over 10,000 in 1980. Together these communities comprised 39 percent of the state's total population. This group showed the largest percentage growth (8 percent) between 1980 and 1986 (Figure 1). The total state population, by comparison, grew by 4 percent during this period.

Cities with a population between 2,500 and 10,000 in 1980 also exhibited positive population growth, but cities with less than 2,500 population declined during this time period.



Note: Numbers above the bars are the percentage changes between 1980 and 1986.

Figure 1. Change in population by city-size groups.

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TAXABLE SALES

Similar shifts can be seen regarding taxable sales receipts by city size group. While constituting about 39 percent of the population in 1980, cities with a population over 10,000 accounted for over 60 percent of the taxable sales in the state in 1980 and about 70 percent in 1986 (Figure 2). Cities with populations of 2,500 to 10,000 had a slight decrease in their market share, while the smaller towns' market share decreased in a range from 16 percent to 26 percent.

The retail sectors of smaller cities are experiencing a greater share of the economic downturn than cities in the two largest size groups. This indicates that people are being drawn to larger regional retail centers, not only as a place to live and work, but as a place having more choices of products on which to spend their retail dollars.

Retail taxable sales for 1980-1986 were inflated to 1986 constant dollars using the consumer price index to facilitate comparison of real purchasing power between time periods. This conversion reveals that cities in all size groups showed a decrease in real taxable sales between 1980 and 1986 (Figure 3). While *nominal* spending for towns over 10,000 increased 21.4 percent, *real* spending decreased by 8.8 percent when inflation is considered. Real retail sales activity decreased for all size groups and, in fact, decreased state-wide by nearly 17 percent between 1980 and 1986. Larger cities were not as severely affected by this decrease, but decreases of 31 percent to 38 percent for towns under 2,500 clearly affected individual retailers in those communities.

PULL FACTORS

Trade area capture (TAC) analysis was used to estimate the number of consumer equivalents purchasing taxable merchandise in a particular city's trade area. TAC incorporates county and state per capita income and local and state expenditure factors that affect a community's trade area.

The underlying assumption of TAC is that local tastes and preferences, after adjusting for differences in per capita income, are similar to the state's (Harris, 1984).

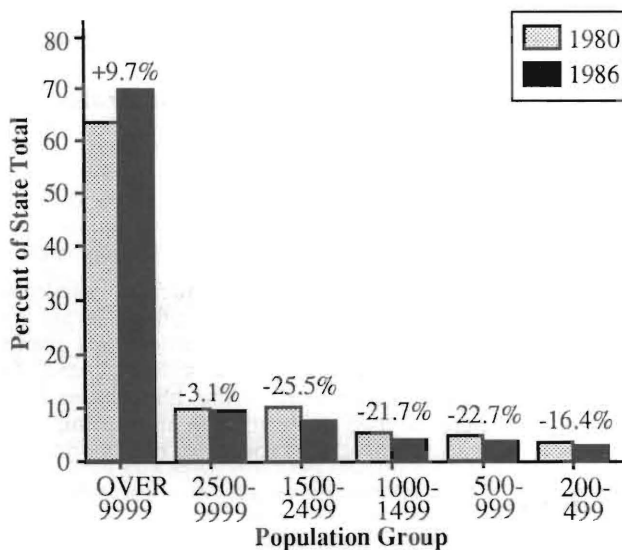
Pull factor analysis was used to estimate the portion of consumer equivalents doing business in a particular city. It is derived by dividing the trade area capture by the trade area population. A trade area's population consists of populations of the city, surrounding townships, and other cities within the trade area boundaries.

Dividing TAC by trade area population enables estimation of changes in pull factors net of trade area population changes. This factor indicates the degree to which a community is capturing the taxable sales expenditures of trade area residents and indicates more or less per capita spending in a local community than that of the state average.

Trade area capture estimates and pull factors were derived for over 100 North Dakota communities for 1980 and 1986. Trade area capture and pull factors are not available for cities with population over 10,000 (with the exception of Jamestown).

Trends in a community's ability to attract retail trade are illustrated by comparing 1980 and 1986 pull factors. Pull factors for all population size groups analyzed declined between 1980 and 1986. Cities with populations of 2,500 to 10,000 exhibited an average decrease in their pull factor of 10 percent (Figure 4).

Towns between 500 and 2,500 population revealed percentage decreases in their pull factor of between 20 percent and 29 percent, while the pull factor in towns under 500 declined only about 8 percent between the two years. This is in contrast to a study of Nebraska cities by Johnson and Young (1987) who found that pull factors for cities under 500 declined about 33 percent between 1980 and 1986.



Note: Numbers above the bars are the percentage changes between 1980 and 1986.

Figure 2. Market share of taxable sales by city-size group.

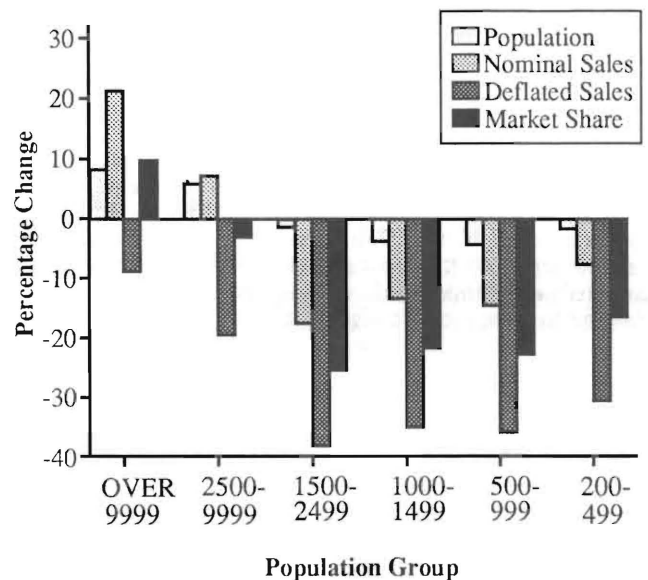
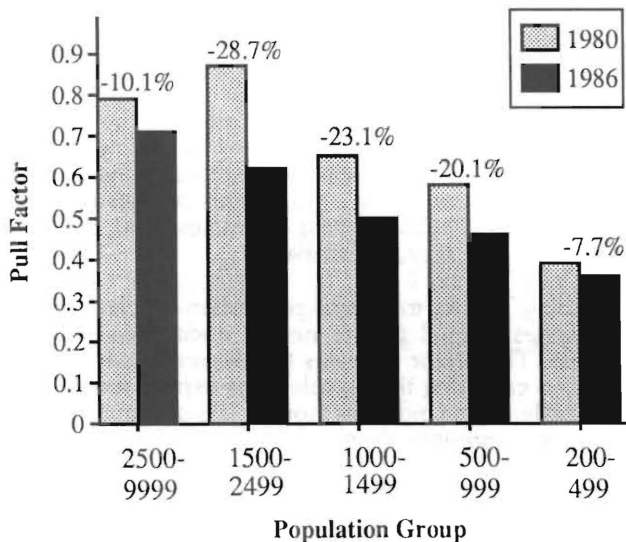


Figure 3. Changes in selected attributes by city-size groups.



Note: Numbers above the bars are the percentage changes between 1980 and 1986.

Figure 4. Pull factors by city-size group.

Decrease in retail sales activity revealed by the decline in pull factors in cities less than 10,000 population is an indication of the shifts in retail trade patterns. Unfortunately, no trade areas are defined for the larger cities, so a direct comparison of pull factors cannot be made. However, examining market share of the various size groups (figs. 2 and 3) indicates that losses incurred by smaller cities in the state were offset by gains in taxable sales by the larger, regional trade centers.

REGIONAL ANALYSIS

Population, nominal and deflated taxable sales, market share, and per capita income data were compiled for North Dakota counties. Not surprisingly, these data show a decline in most indicators for the western and central regions of the state. The following series of graphs (figs. 5-8) illustrate these trends.

According to census estimates, between 1984 and 1986 the state lost about 10,000 residents, the equivalent of a city of the size of West Fargo or Wahpeton. Six regions (all except 4 and 5) lost population, and the four western regions lost a total of almost 9,400 residents. Decline in energy-related activity is the most prominent reason for the western regions' economic and demographic performance, but decline in farm income also played an important role.

CONCLUSIONS AND IMPLICATIONS

Continued trade leakage, while not a new phenomena, causes stressful situations for smaller retail centers in the state. They continue to have difficulty maintaining an economically viable main street that is able to serve the basic needs of its residents. As trade volume continues to slip, both nominally and in deflated terms, minimum economic thresholds are reached for individual businesses, which are

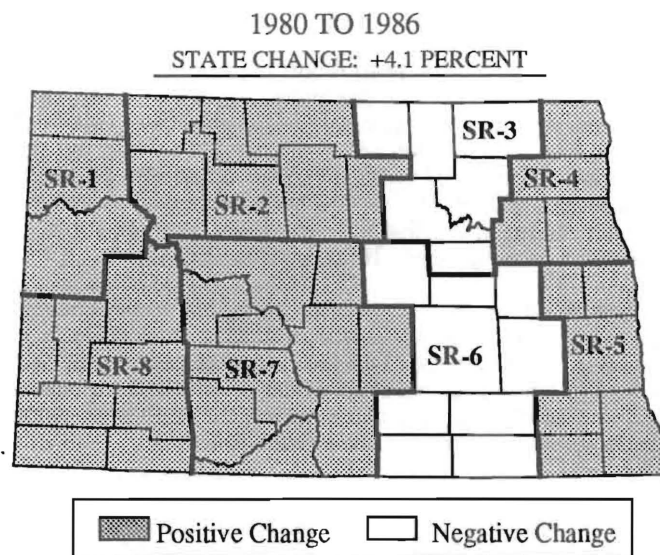


Figure 5. Change in regional population.

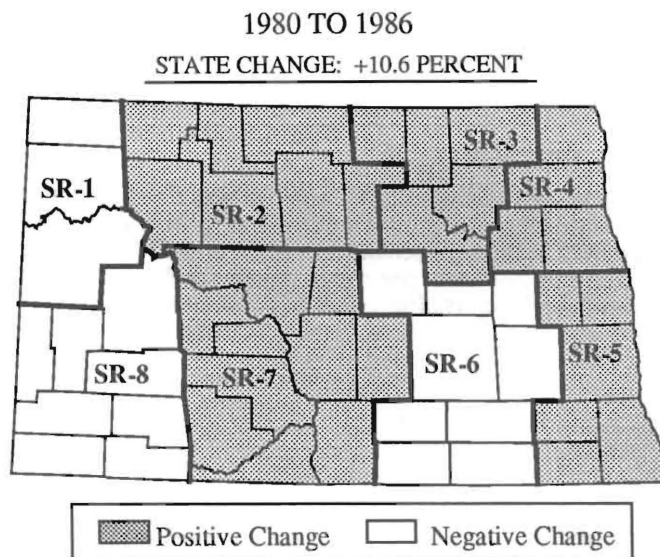


Figure 6. Change in regional nominal sales.

then forced to close. The main street nucleus deteriorates, and shoppers are forced to shop at other, larger trade centers for their basic needs. Trade volume drops even further as a town's "pulling power" erodes. Not all small cities have experienced this erosion; some have been able to maintain or increase their sales volume and remain viable. However, this is usually at the expense of neighboring cities.

References

Coon, Randal C., and F. Larry Leistritz. 1987. *The North Dakota Economy: Estimating Recent Changes and Projecting Future Trends in the Economic Base*. Agr. Econ. Stat. Series No. 41. Fargo: North Dakota State University, Dept. of Agr. Econ.

1980 TO 1986
STATE CHANGE: -16.9 PERCENT

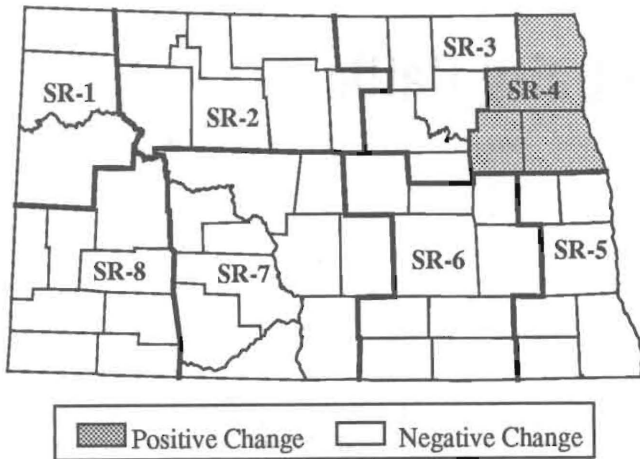


Figure 7. Change in regional deflated sales (1986 constant dollars).

1980 TO 1986

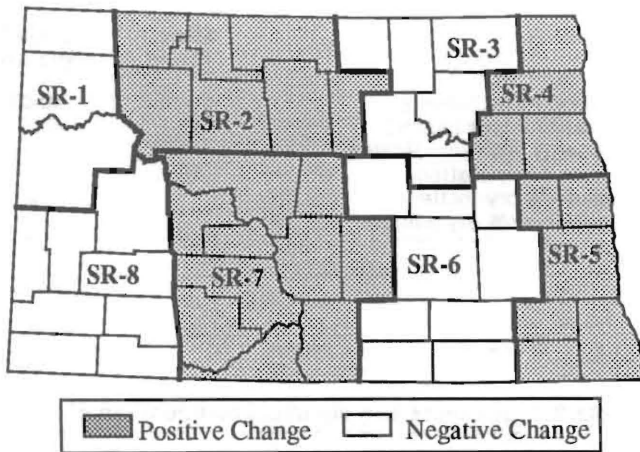


Figure 8. Change in regional market share.

Harris, Thomas R. 1984. "Sales Leakages and Business Opportunities in Small Communities." Research paper presented at WAEA meeting, Dept. of Agr. Econ., University of Nevada, Reno.

Johnson, Bruce, and Joel Young. 1987. "Trends in Retail Sales Activity Across Nebraska's Counties and Communities." Paper presented at 1987 Conference of The Nebraska Economic and Business Assoc., Kearney, Nebr.

Leistriz, F. Larry, Brenda L. Ekstrom, and Harvey G. Vreugdenhil. 1987. Selected Characteristics of Business Operators in North Dakota Agricultural Trade Centers. Agr. Econ. Rpt. No. 217. Fargo: North Dakota State University, Dept. of Agr. Econ.

Mortensen, Timothy L., and F. Larry Leistriz. Changes in Selected County, City, and Trade Area Characteristics between 1980 and 1986. 1988. Agr. Econ. Stat. Series Rpt. No. 42. Fargo: North Dakota State University.

North Dakota Extension Service. Various years. Trade Area Surveys (various cities). NDSU-CES, Fargo.

North Dakota Tax Department. 1986 Annual Report. Bismarck.

North Dakota Tax Department. Various issues. North Dakota Sales and Use Tax Statistical Reports. Bismarck.

Stone, Kenneth E. 1987. "Identifying the Financial Stress of Rural Businesses and Methods for Assisting Them." Ames: Iowa State University, Dept. of Agr. Econ.

U.S. Bureau of the Census. 1981. 1980 Census of Population. Number of Inhabitants, North Dakota. PC-80-1-A36. Washington, D.C.: GPO.

U.S. Bureau of the Census. Various issues. Sub-County Population Estimates. Washington, D.C.

U.S. Department of Labor. Bureau of Labor Statistics. Consumer Price Index. Washington, D.C.