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## **REVERSE MIGRATION AND NONMETROPOLITAN EMPLOYMENT IN FOUR GREAT PLAINS STATES, 1970-1980**

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**ABSTRACT**—During the rural renaissance of the 1970s, the United States experienced a reverse migration pattern in which the flow of migration was predominantly urban to rural, unlike the traditional rural to urban flows. This migration phenomenon was equally experienced in the North Central Region, which includes the Great Plains states of North Dakota, South Dakota, Nebraska, and Kansas.

This study investigated the impact of the reverse migration phenomenon on employment in eight industry categories in three categories of counties in North Dakota, South Dakota, Nebraska, and Kansas. Findings show that net migration had differential impacts on employment by industry category and by county category. While the services industry category was most affected by net migration, no significant relationship was found between net migration and employment in the agriculture industry, the mainstay of the economy of these states.

**KEY WORDS:** migration, nonmetropolitan, rural, employment, Great Plains

### **Research Focus**

The study of Oyinlade and Baer (1991) investigated the relationship between net migration and employment in the nonmetropolitan counties of North Dakota, South Dakota, Nebraska, and Kansas during the rural renaissance of the 1970s, collectively as a division of the West North Central Region. The present study further investigates the same relationships sought by Oyinlade and Baer, but at the individual state levels rather than collectively as a division. That is, this study further analyzes Oyinlade and Baer's (1991) data to answer the question, What is the impact of nonmetropolitan net migration rates on employment in the major industries in North Dakota, South Dakota, Nebraska, and Kansas during the 1970s? By focusing on the

individual states rather than the aggregate of the four states, this study will identify the impacts of net migration on nonmetropolitan employment separately for each of the four states during the rural renaissance of the 1970s. This effort will uncover any specific relationship between net migration and employment in these states that might have been masked in the aggregate analysis of Oyinlade and Baer (1991).

Adamchak et al. (1985) set the tone for the importance of this study. They referred to the 1970s as a "decade of major shifts in long-standing population trends and patterns of socioeconomic development . . . the decade will be viewed as a decade of historical importance, for the changes set in motion then will have consequences for metropolitan and nonmetropolitan areas, states and regions well into the future" (Adamchak et al. 1985:5). Specifically, this study is important because on average, migrants tend to move from low-job-opportunity and low-income areas to high-job-opportunity and high-income areas (Heer and Grigsby 1992). It is therefore intriguing to witness net migration flows in favor of the nonmetropolitan areas with historically fewer opportunities for jobs and high income, especially since these migrants included young, educated professionals and craftsmen (Morrison and Wheeler 1976). By studying the impact of net migration rates on employment in the nonmetropolitan counties, this research will attempt to show the extent to which the turnaround migration of the 1970s contributed to employment gains in the nonmetropolitan counties in each of the four Great Plains states that comprised the focus of this study.

While empirical and analytical, this study is equally and purposely historical by its focus on the 1970-80 decade. This historical focus is by no means an attempt to discount the recent (1990s) rural population rebound; rather, it is necessitated by two main factors: (1) it continues the analysis of Oyinlade and Baer's (1991) data, which focused on the 1970s decade, and (2) the nonmetropolitan population growth of the 1970s was a more significant population phenomenon than that of the 1990s because it was the first time in several decades that nonmetropolitan counties grew faster than metropolitan ones. Also, the 1970s population turnaround had a greater positive population impact on the Great Plains than did the turnaround of the 1990s, which recorded mainly widespread losses in the Great Plains (O'Malley 1994; Johnson and Beale 1998). North Dakota was especially hit hard with population loss during the 1990s, when only one nonmetropolitan county (and five metropolitan counties) in the entire state gained population (North Dakota Data Center 2000).

By studying net migration in the context outlined in this study, it is expected that a research gap will be filled. Few data exist on the effects of net migration rate on employment in the nonmetropolitan counties of the Great Plains, especially in relation to employment in the major industry categories in each state. Also, as determined thus far, except for Oyinlade (1987) and Oyinlade and Baer (1991), no study has focused specifically on the effects of net migration on employment in the Great Plains states, particularly in relation to the county categories outlined in this study. A study conducted by Brown and Beale (1980) analyzed total population change in 2,469 nonmetropolitan counties nationwide. A replication conducted by Poston (1983) considered net migration and focused on 2,444 nonmetropolitan counties, also nationwide. More recent studies such as O'Malley (1994), Fuguitt and Beale (1996), and Johnson and Beale (1998) that focused on the rural renaissance of the 1990s also concentrated on nationwide patterns only. None of these studies, nor others such as Flora and Thomas (1978), Beale and Fuguitt (1981), Borchert (1981), Lonsdale (1981), and Morrison (1981), that actually focused on the North Central Region, attempted to answer the same questions set forth in this study.

### **Review of Literature**

Rural to urban migration flow has dominated migration patterns so much that it has come to be known as the traditional migration pattern (Wardwell and Brown 1980). Contrary to this traditional pattern, however, between 1970 and 1980 nonmetropolitan America grew faster than the metropolitan areas, mainly from an urban to rural migration flow. In fact, the figures for this turnaround or reverse migration were somewhat high. Between 1970 and 1980 approximately three-fourths of all nonmetropolitan counties in the United States gained population, either from natural increase, migration, or both. This represented the first time in more than a century that the nonmetropolitan counties grew faster than the urban counties (Population Reference Bureau 1982).

More specifically, each year between 1970 and 1975 the metropolitan areas of the United States lost 131 people through out-migration to the nonmetropolitan areas for every 100 people they gained through in-migration. This was a reversal of what was experienced in the 1960s, when an average of 94 people moved out for every 100 people that moved in (Morrison and Wheeler 1976). This nonmetropolitan growth greatly contradicted the projection made for that period by the Bureau of Economic

Analysis, which had projected a growth of 5.3% for the nonmetropolitan counties, but actual growth was 15.8% (Population Reference Bureau 1982)

Was the nonmetropolitan growth of the 1970s only an urban sprawl? Was it only a spillover of the large metropolis into its surrounding territories? The answer is no. Beale (1976) indicated that both the least densely populated counties and those counties that contained no cities with a population greater than 2,500 experienced significant growth in the 1970s. And, according to McCarthy and Morrison (1978), population increases occurred in all types of nonmetropolitan areas, not merely those adjacent to metropolitan centers. Morrison and Wheeler (1976) also explained that the nonmetropolitan growth was not simply a matter of a spillover effect of the large metropolis because growth occurred in areas "outside what may be called metaphorically metropolitan magnetic field" (Morrison and Wheeler 1976:11). Similarly, Zelinsky (1977) stated that the population increase in the nonmetropolitan counties not adjacent to the metropolitan areas was startling. The category "entirely rural, nonadjacent counties"—those that are far from metropolitan areas and contain no town of more than 2,500 inhabitants—grew by 1.4% annually during the early 1970s. This was in sharp contrast to their 0.4% rate of population loss during the 1960s (Morrison and Wheeler 1976).

### **North Central Region and the Great Plains**

During the 1970s the North Central Region, comprising Michigan, Ohio, Indiana, Illinois, Wisconsin, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, and Kentucky (Adamchak et al. 1985), lost population through high net out-migration to the South and West, but the pattern of net migration in the region, favoring the nonmetropolitan sector, resembled that of the entire nation. The nonmetropolitan sector of the North Central Region had a higher growth rate than the metropolitan areas. Fertility and mortality were relatively low and stable throughout the region; therefore, migration was the major tool responsible for population redistribution (Adamchak et al. 1985).

A comparison of population change in the metropolitan and nonmetropolitan counties between 1950 and 1980 shows that the metropolitan counties of the North Central Region had a net migration gain of 5.1% during the decade of the 1950s, a net gain of 0.3% in the 1960s, but a net loss of 4.7% during the 1970s. On the other hand, the nonmetropolitan counties had a net migration loss of 10.9% during the 1950s, a net loss of 5.6% (still

net out-migration, but decreasing) in the 1960s, and a net gain of 3.5% (net in-migration) during the 1970s (Adamchak et al. 1985). This comparison shows a population loss of 9.8% for the metropolitan counties but a population gain of 14.4% through migration for the nonmetropolitan counties. Hence, the loss of the metropolitan counties was the gain of the nonmetropolitan counties in the North Central Region.

The states of North Dakota, South Dakota, Nebraska, and Kansas were no exceptions to the general migration pattern of the 1970s. Although these states did not register *statewide* net migration gains, they minimized their losses tremendously. For example, South Dakota had a statewide net migration rate of -14.4% between 1950 and 1960, but -4.0% during the 1970s (a positive net migration change of 10.4%). Differences in net migration patterns between the two decades 1950-60 and 1970-80 also recorded net gains (through reduced net out-migration) for North Dakota (14.2%), Nebraska (7.9%), and Kansas (1.4%) (Adamchak et al. 1985).

Nonmetropolitan migration patterns of the 1970s also characterized the *counties* of the Great Plains states, but to a lesser extent. In the two decades between 1950 and 1970, the nonmetropolitan counties of the Great Plains states lost population. The loss was especially pronounced for Kansas in the 1960s, with a net migration loss of 6.1% compared to its 1950-60 loss of only 2.3%. By the 1970s, however, the turnaround phenomenon affected the nonmetropolitan sector of the Great Plains such that fewer counties observed net migration losses than in the previous decades. For example, during the 1960s, 18 Kansas counties declined 15% or more, compared with only one county during the 1970s. Also, many nonmetropolitan counties (not only in Kansas but across the Great Plains) recorded net migration gains (Adamchak et al. 1985).

### **Migration Effects on Employment**

Morrison and Wheeler (1976:4) described the population that went to the nonmetropolitan counties during the 1970s as a “relatively affluent and well-educated category of urbanites . . . for example, young professionals, retired executives, artists and craftsmen, affluent part-time commuters, unemployed idealists, and returning natives who are also likely to have learned city ways.” The influx of these people, including retirees, seasonal residents, and weekenders, into the nonmetropolitan counties in the 1970s created a demand for services that stimulated business, created jobs, and

helped turn around the stagnant economy of the nonmetropolitan counties (Schwarzweiler 1979).

Borts and Stein (1964) developed a framework that theoretically confirmed that differential changes in employment are caused by differential rates of in-migration. This confirmation is based on the assumption that the labor demand schedule for a given location is perfectly elastic. Such elasticity causes the employment rate in the location to increase by the same amount as the shift in the labor supply schedule that resulted from migration. Hence, they confirmed that any increase in labor supply that results from migration induces increased investment expenditures in the receiving areas. Such expenditures will cause an increase in the demand for labor and thus give rise to higher wages.

Muth's findings support Borts and Stein's in that migration shifts a city's labor supply schedule to the right, and the extent of the shift depends on the demographic composition of the migrants (Muth 1971). Muth further contends that the greater the proportion of migrants who are between the ages of 25-54 years, the greater the positive shift in the labor supply schedule. This is because the 25-54 age cohort has a higher labor force participation rate than other demographic categories. Muth (1971) also stated that for cities with a population of under a quarter of a million, in-migration induces an increase in employment almost proportionate to its expected increase in the city's labor force. Li (1976:565) explains how the gains in employment through migration reduce the overall nonemployment rate, asserting that "it can be argued that since many migrants got jobs, the total employment rate should have risen as a consequence of migration." It is therefore not surprising to find that employment and income grew fast during the 1970s in the nonmetropolitan counties. Between 1970 and 1979 nonmetropolitan counties of the United States had a 23.9% increase in manufacturing jobs. In 1962 manufacturing employment in nonmetropolitan America employed 3.9 million workers, but in 1978 as many as 5.7 million people were employed in manufacturing in all of nonmetropolitan America (Haren and Holling 1979).

Increase in employment was not confined to the manufacturing industry alone. In fact, other industries such as mining, services, and construction had a greater increase in employment than the manufacturing industry (Tweeten 1982). This means that changes in employment were not equal throughout the industrial sector, and this might have been due, at least in part, to the possible differential effects of migration on the different industries (Oyinlade and Baer 1991). Similarly, Tweeten (1982) discovered that

between 1970 and 1977, nonmetropolitan wage and salary employment increased by 22%, doubling the percentage gain in the metropolitan areas. Tweeten further stated that the largest percentage gain in nonmetropolitan employment was in the service-producing industry, with an increase of 39.4%, followed by mining, with an increase of 36.2%, and construction, with an increase of 32.1%.

Like the rest of the nation, the gains in population in the nonmetropolitan North Central Region resulted in gains in employment. Flora and Thomas (1978) indicated a positive association between net in-migration and higher employment in manufacturing in the nonmetropolitan North Central Region. Also, between 1972 and 1978 nonmetropolitan factory jobs in the North Central Region increased by 48%, constituting about a 30% share of total US nonmetropolitan industrial employment (Haren and Holling 1979). In addition, between 1970 and 1978 nonmetropolitan counties in the region experienced a 26.7% increase in total nonfarm wage and salary employment. The differential gains in employment in some industries included a 39.1% gain by the trade industry, a 13.7% gain by mining, a 40.5% gain by the construction industry, and a 44.3% gain by the services industry (Haren and Holling 1979).

In their aggregate-level analysis of North Dakota, South Dakota, Nebraska, and Kansas, Oyinlade and Baer (1991) found that in the category of nonmetropolitan county immediately adjacent to metropolitan areas, net migration was associated with higher employment in the retail, finance, services, and public administration industry categories. In the category of county not adjacent to a metropolitan county but having at least one town of 25,000 people or more, they discovered net migration to be positively correlated to increased employment in the categories of transportation, wholesale trade, and services industries. In addition, they found net migration to favor higher employment in the mining and construction, manufacturing, and services industries in the category of counties not adjacent to a metropolitan county and having no town with a minimum population of 25,000 people.

### **Research Design and Methodology**

This research adopts the nonmetropolitan county classifications used by Kuehn (1979), Oyinlade (1987), and Oyinlade and Baer (1991). The nonmetropolitan counties in each of the four states being studied (ND, SD, NE, KS) were classified under three county categories: (1) nonmetropolitan



counties that were adjacent to metropolitan areas (ADJ), (2) nonmetropolitan counties that were nonadjacent to metropolitan areas but had at least one large town of 25,000 people or more (NALT), and (3) nonmetropolitan counties that were nonadjacent to metropolitan counties and were characterized by small towns of fewer than 25,000 inhabitants (NAST).

In each state, only a few counties qualified for classification in the ADJ and NALT categories, so no sampling was necessary; all qualified counties were used for analysis. For the NAST county category, several counties qualified in each state for classification in this category. In North Dakota and South Dakota, 44 and 58 counties, respectively, qualified for classification in this category, while 76 and 84 counties qualified in Nebraska and Kansas, respectively. The stratified systematic sampling technique was then used to get a representative sample of counties for the NAST county category. Table 1 shows the number of counties sampled for this study by county category and by state.

Census data for employment in the major industry categories in each state were collected for 1970 and 1980. Net migration data, by county, in each state, for the 1970 and 1980 census years were obtained from the 1985 North Central Regional Research Publication number 308 (see Adamchak et al. 1985). Also, the percentage change in employment, in each major industry category, was calculated using the formula

$$Pchind = \{(Neind\ 1980 - Neind\ 1970)/Neind\ 1970\}100$$

where *Pchind* was the percentage change in employment and *Neind* was the number of people employed in each industry category.

Using the US Census Bureau's 1980 prevailing Standard Industrial Classification system (US Census Bureau 1980), the industry categories used in this study are as follows: (1) agriculture, forestry, and fisheries (referred to in this research as agriculture); (2) mining and construction; (3) manufacturing; (4) transportation, communications, and other public utilities (referred to in this research as transportation); (5) wholesale trade; (6) retail trade; (7) finance, insurance, and real estate (referred to in this research as finance); and (8) services.

Simple linear regression analyses were computed at  $\alpha = 0.05$  to determine the extent to which the rates of net migration predicted gains or losses in employment in each industry category in each state. Due to insufficient data, no test was performed in the NALT category in South Dakota, Nebraska, and Kansas.

TABLE 1  
NUMBER OF COUNTIES SAMPLED FOR ANALYSIS BY COUNTY  
CATEGORY AND BY STATE

State	Adjacent (ADJ)	Nonadjacent Large Town (NALT)	Nonadjacent Small Town (NAST)
North Dakota	5	3	8
South Dakota	5	2	11
Nebraska	14	1	15
Kansas	11	2	16
TOTAL	35	8	50

### Results

Results of tests performed are presented by state and county category, from north to south. Table 2 presents details for each state.

#### North Dakota

**ADJ county category:** Net migration was found to be a significant predictor of employment in the retail industry category ( $b = 1.7247$ ,  $r^2 = 0.9411$ ). The greater the rate of net migration, the greater the percentage increase in employment in the retail trade industry category. Net migration failed to be a significant factor of employment in the other industry categories in this county category.

**NALT county category:** In this county category, net migration was found to significantly predict employment in the wholesale ( $b = 1.6649$ ,  $r^2 = 0.9961$ ) and services ( $b = 1.4040$ ,  $r^2 = .9954$ ) industry categories. The greater the rate of net migration, the greater the percentage increase in employment in the wholesale and services industry categories. Net migration failed to be a significant factor of employment in the other industry categories in this county category.

***NAST county category:*** Net migration was found to significantly predict employment in the manufacturing ( $b = 13.1104$ ,  $r^2 = 0.9678$ ), retail trade ( $b = 0.9804$ ,  $r^2 = 0.6610$ ), and services ( $b = 1.2419$ ,  $r^2 = 0.7054$ ) industry categories. A positive regression coefficient was indicated for each industry category. The greater the rate of net migration, the greater the percentage change in employment in the manufacturing, retail trade, and services industry categories. Net migration failed to be a significant predictor of employment in the other industry categories in this county category.

### **South Dakota**

In this state, net migration was found to be a significant predictor of employment in the finance industry category in the ADJ county category ( $b = 3.0960$ ,  $r^2 = 0.9703$ ). The greater the rate of net migration, the greater the percentage increase in employment in the finance industry category in the ADJ county category in South Dakota. Net migration failed to significantly contribute to employment in the other industry categories in this and other county categories in the state.

### **Nebraska**

***ADJ county category:*** Net migration was found to be a significant predictor of employment in the mining and construction ( $b = 2.4580$ ,  $r^2 = 0.3539$ ), manufacturing ( $b = 2.6534$ ,  $r^2 = 0.3948$ ), transportation ( $b = 3.6319$ ,  $r^2 = 0.3479$ ), retail trade ( $b = 2.8456$ ,  $r^2 = 0.4565$ ), finance ( $b = 4.2039$ ,  $r^2 = 0.2820$ ), and services ( $b = 3.3728$ ,  $r^2 = 0.4788$ ) industry categories. The greater the rate of net migration, the greater the percentage increase in employment in the mining and construction, manufacturing, transportation, retail trade, finance, and services industry categories in the ADJ category in Nebraska. Net migration failed to be a significant predictor of employment in the other industry categories in this county category.

***NAST county category:*** Net migration was a significant predictor of employment in the mining and construction ( $b = 3.9526$ ,  $r^2 = 0.2894$ ) and the transportation ( $b = -12.9266$ ,  $r^2 = 0.3545$ ) industry categories. The regression coefficient was positive for the mining and construction industry category but was negative for transportation. Hence, the greater the rate of net migration, the greater the percentage increase in employment in the mining and construction industry category, and the greater the rate of net migration,

TABLE 2  
COEFFICIENT OF DETERMINATION ( $R^2$ ) VALUES FOR THE EFFECTS OF NET MIGRATION RATE ON EMPLOYMENT  
IN THE MAJOR INDUSTRY CATEGORIES, BY COUNTY CATEGORY AND BY STATE

	Major industry category							
	Agriculture	Mining & Construction	Manu- facturing	Trans- portation	Wholesale Trade	Retail Trade	Finance	Service
North Dakota								
ADJ category	0.1201	0.1820	0.7282	0.3908	0.5004	0.9411*	0.3814	0.0818
NALT category	0.3005	0.8904	0.9390	0.9715	0.9961*	0.4884	0.9563	0.9954*
NAST category	0.0125	0.2073	0.9678*	0.0588	0.3708	0.6610*	0.2349	0.7054*
South Dakota								
ADJ category	0.2987	0.4839	0.0125	0.5436	0.0254	0.7258	0.9703*	0.5040
NALT category	***	***	***	***	***	***	***	***
NAST category	0.2708	0.1378	0.0661	0.0025	0.0271	0.0205	0.0050	0.0743
Nebraska								
ADJ category	0.0355	0.3539*	0.3948*	0.3479*	0.0094	0.4565*	0.2820*	0.4788*
NALT category	***	***	***	***	***	***	***	***
NAST category	0.0099	0.2894*	0.0216	0.3545*	0.0047	0.1006	0.1868	0.0175
Kansas								
ADJ category	0.0624	0.0184	0.0273	0.2644*	0.0863	0.0462	0.1262	0.1221
NALT category	***	***	***	***	***	***	***	***
NAST category	0.0456	0.5758*	0.2265	0.0151	0.0802	0.0365	0.0352	0.4121*

Note: ADJ category = adjacent; NALT category = nonadjacent, large town; NAST category = nonadjacent, small town.

\*Significant at  $\alpha = 0.05$ , \*\*\*Insufficient data, regression not computed.

the lower the percentage gain in employment in the transportation industry in this county category. Net migration failed to significantly contribute to employment in the other industry categories in this county category in the state.

### **Kansas**

**ADJ county category:** Net migration significantly predicted employment in the transportation industry ( $b = 2.5001$ ,  $r^2 = 0.2644$ ). The greater the rate of net migration, the greater the percentage increase in employment in the transportation industry category in this county category in Kansas. Net migration failed to significantly contribute to employment in the other industry categories in this and other county categories in the state.

**NAST county category:** The net migration rate significantly predicted employment in the mining and construction ( $b = 6.8697$ ,  $r^2 = 0.5758$ ) and the services ( $b = 1.450$ ,  $r^2 = 0.4121$ ) industry categories. The greater the rate of net migration, the greater the percentage increase in employment in the mining and construction and the services industry categories in the NAST county category in Kansas.

Net migration failed to significantly contribute to employment in the other industry categories in this and other county categories in the state.

### **Summary**

The findings of this study is summarized on a state-by-state basis as follows:

#### **North Dakota**

Between 1970 and 1980 the net migration rate significantly predicted an increase in employment in the following major industry and county categories: manufacturing (NAST county category), wholesale trade (NALT county category), retail trade (ADJ and NAST county category), and services (NALT and NAST county categories). Net migration rate did not significantly predict increase in employment in the remaining five industry categories.

**South Dakota**

Net migration rate significantly predicted an increase in employment in the finance industry category in the ADJ county category only. Net migration rate did not significantly contribute to an increase in employment in the remaining eight industry categories in any county category.

**Nebraska**

Net migration rate significantly predicted an increase in employment in the following industry and county categories: mining and construction (ADJ and NAST county categories), manufacturing (ADJ county category), transportation (ADJ county category), retail (ADJ county category), finance (ADJ county category), and services (ADJ county category). Net migration significantly predicted the percentage decrease in employment in the transportation industry category in the NAST county category. No other relationship was found between net migration and employment in this state.

**Kansas**

Net migration rate significantly predicted an increase in employment in the following industry and county categories: mining and construction (NAST county category), transportation (ADJ county category), and services (NAST county category). No other relationship was found between net migration and employment in any industry category in Kansas.

**Discussion**

The findings of this research indicate that the nonmetropolitan net migration rates of the 1970s differentially affected employment by industry categories and county types. The patterns of association between net migration rates and changes in employment in the various industries lead to the following specific conclusions:

1. Whereas Nebraska and North Dakota experienced the greatest impact of turnaround migration on nonmetropolitan employment during the 1970s, Kansas and South Dakota experienced the least impact.

2. In each of the four states studied, net migration rate was found to be most significantly related to employment in the ADJ county category, and this is most pronounced in Nebraska. Nonetheless, several significant relationships were also found in the NAST county category in each state.
3. Net migration rate consistently contributed to the percentage increase in employment in the services industry category. It can be speculated that this was most likely due to the fact that the services industry expanded to better serve the increasing nonmetropolitan population.
4. Net migration rate mostly contributed to a percentage gain in employment in the light industries in the ADJ county category. Such light industries included retail trade, finance, and services.
5. Net migration rate mostly contributed to a percentage gain in employment in the heavy industries in the NAST county category. The heavy industries included manufacturing and mining and construction.
6. Net migration rate did not significantly contribute to a percentage increase in employment in agriculture in any state.

Certain implications are evident from the findings of this study. In the ADJ and NAST county categories, light industries and heavy industries were found to be significantly related to net migration rate. This finding could imply that the counties in these categories obtained a large percentage of their revenues from these industries, and consequently built a reliance on the industries. Such a reliance could be advantageous when the industries are experiencing a boom, but a period of recession for the industries may create a financial disaster for these counties.

The findings indicated that net migration rate did not significantly contribute to an increase in employment in the agriculture industry. This could have been due to the recession that affected the agriculture industry during the 1970s. It also could have resulted from the tertiarization of the economy in which there was increased job mobility from the primary (agriculture and extractive industries) and secondary (manufacturing and transportation) sectors of the economy into the tertiary sector (services). Although it is uncertain why net migration was significantly associated with decreased employment in the transportation industry in the NAST county

category in Nebraska, it is suspected that tertiarization could have been a factor.

The findings of this study support the suggestions of Oyinlade and Baer (1991) that planning efforts should be directed toward the creation of a diverse economic base for each county. Such a diverse economic base could improve the rate of employment, and at the same time provide alternative sources of income for counties that obtained their financial resources from limited industries. These alternative resources will provide support for these counties if a recession should affect the industry from which they obtain most of their income.

Efforts should also be made to improve employment in the agriculture industry, especially since agriculture is the mainstay of the economy in the Great Plains. Specific policies may be required to encourage people to return to the industry. Such policies may be especially directed to enhance higher income opportunities in agriculture, as well as encourage young adults, the educated, and other skilled professionals to take up employment in this industry. Also, although the reverse migration of the 1970s was not sustained into the 1980s, "many opportunities for industrial and retail expansion remain in nonmetropolitan areas" (Johnson 1989:324). This could be used by rural development planners to attract businesses and migrants to rural areas. Policy planners in the Great Plains need to be aware of migration patterns and implement creative rural development policies to retain in-migrants in the effort to stimulate the rural economy through higher employment.

### **Limitation**

The goal of this research, to seek the relationship between net migration and employment, was accomplished. However, because only one independent variable (net migration) was regressed on employment rates in various industries, it is unknown the extent to which the regression coefficients for each analysis was overestimated. The absences of other independent variables in the data set used for this study reflected the singular purpose of Oyinlade and Baer (1991) to study only the impact of net migration on employment in the nonmetropolitan counties, based on the Borts and Stein (1964) theory that changes in net migration result in changes in employment at a location. Perhaps a collection of similar data to include other theoretically related independent variables, such as change in number of business enterprises, cost of living, and income distribution in each



county studied, will yield, through multivariate analysis, a more conservative estimate of the impact of migration on employment than indicated in this study. This is recommended for future study.

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