

**Institute for Public Policy and Business Research
University of Kansas**

**Kansas Regional
Profiles**

Final Report

by

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prepared for

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Preface

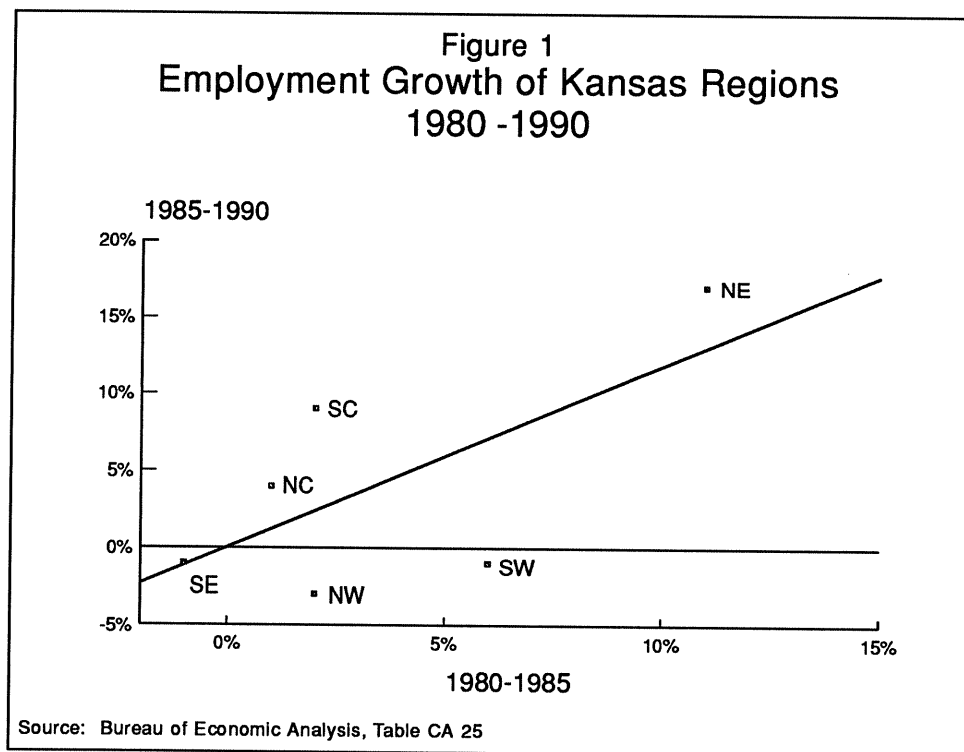
This group of studies of the Kansas regional economies was performed as part of the Kansas Inc. Strategic Planning Program. The profile of the Northeast region was produced by Robert Glass, Assistant Scientist at IPPBR. The profile of the North Central region was produced by Arthur J. Janssen, Assistant Professor of Economics at Emporia State University. The profiles of the Northwest and Southwest regions were produced by Ralph Gamble, Professor of Economics and Finance at Fort Hays State University. The profile of the South Central region was produced by Carlene Hill Forrest, Director, Center for Economic Development and Business Research, Wichita State University. The profile of the Southeast region was produced by Robert B. Catlett, Assistant Professor of Economics, Emporia State University.

In addition to the authors, several other people contributed to the project. Dr. Anthony Redwood, director of IPPBR, provided crucial guidance during the formulation stage of the project. Dr. Charles Warren, President of Kansas Inc. provided useful insights throughout the project. Henry Schwaller IV, of Kansas Inc. read all of the reports in preliminary stages and provided numerous suggestions for improvement. Dr. Robert Glass of IPPBR provided data for the other authors, in addition to authoring the profile of the Northeast region. Scott Niemann of IPPBR assisted with data collection, computer programming, and graphics in addition to providing invaluable editorial services. Norman Clifford of IPPBR coordinated the project.

Executive Summary

Probably the most salient feature of the regional profiles produced for Kansas Inc. is the sheer variability of economic well-being across geographic regions of the state. Taking total employment as a gross indicator of the level of economic activity, for example, we find that from 1985-1990 employment in Northeast Kansas increased 17 percent, while employment in Southeast Kansas fell 1 percent, with employment growth in the other four regions somewhere between 9 percent and minus 3 percent.

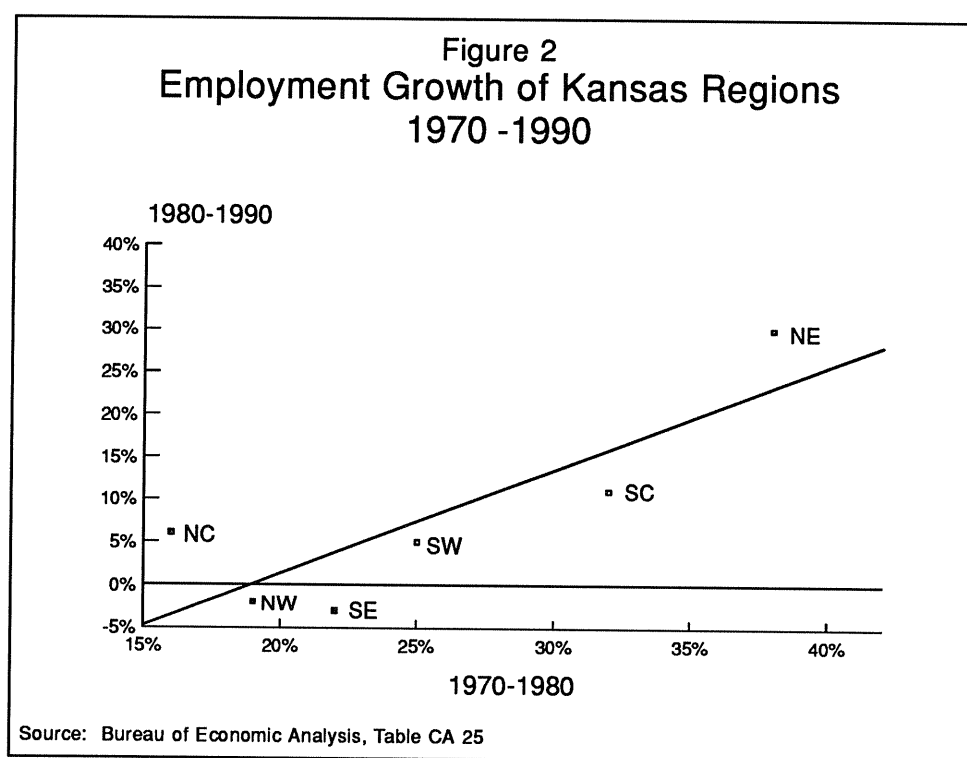
The growth of employment from 1985-1990 for each of the six regions in Kansas can be read off the vertical axis in Figure 1. That figure also illustrates another prominent feature of Kansas regional economies, namely, that differences in the levels of economic activity across regions tend to persist over time. The growth of employment in the six regions from 1980 to



1985 is measured along the horizontal axis of Figure 1, and one can readily see that there is a generally positive relationship between growth in the earlier period and growth in the later period.

For example, the 17 percent growth of employment in the Northeast region during 1985-1990 was preceded by 11 percent growth during 1980-1985, while the 1 percent decline in employment in the Southeast region during the later period was preceded by a 1 percent decline in employment during the earlier period. The major exceptions to the pattern were the South Central region, in which employment grew 9 percent in the 1985-1990 period after growing only 2 percent in the earlier period, and the Southwest region, in which employment declined 1 percent from 1985 to 1990 after growing 6 percent in the 1980-1985 period.

Although one might be tempted to conclude that the persistence of above or below



average rates of growth for regions would be less pronounced if we looked at longer time periods, Figure 2, which compares employment growth in the regions in the 1970-1980 and 1980-1990 periods, shows clearly that such is not the case. In order to interpret the data properly, one must keep in mind that for the state as a whole, the 1980-1990 period saw significantly less employment growth than the 1970-1980 period. Nevertheless, the Southeast region shows an exceptional decline in the later period, with employment declining 3 percent after growing 22 percent in the earlier period, while employment growth in the Northeast region was significantly

faster in the 1980-1990 period (38 percent) than in the earlier period (30 percent). Overall, however, even when we look over a twenty year period, we find that above and below average rates of growth for regions appear to be remarkably persistent.

Figures 1 and 2 provide a general indication of which regions have historically shown strong economic growth and which have been more prone to stagnation. Examination of each individual region casts light on why these trends have persisted. Tables 1 and 2 show the regional employment shares for various sectors in terms of percentage of the state totals. Comparing regional shares of total employment to the regional shares for individual employment sectors helps indicate where a region has a competitive advantage over other regions in the state. Evaluation of these regional areas of strength and recent trends on both the regional and national level helps explain the historical performance and outlook for the future of the regions.

Table 1
Employment in Kansas Regions as a Percent of State Total
1990

	<u>North East Region</u>	<u>North Central Region</u>	<u>North West Region</u>	<u>South West Region</u>	<u>South Central Region</u>	<u>South East Region</u>
Total Employment	39.3	13.9	4.5	8.6	26.2	7.4
Farm Employment	16.7	22.5	14.2	19.8	14.7	12.1
Private Nonfarm Emp.	41.1	11.7	3.8	7.9	26.9	7.1
Government Employment	38.8	20.6	4.7	8.5	19.9	7.4

Source: Bureau of Economic Analysis, Table CA 25

The general indication from Figures 1 and 2, that the Northeast region has been and will continue to be the economic strong point of the state, appears to be born out upon closer examination. During the second half of the decade of the 1980s real personal income in the region grew nearly 21 percent, exceeding both Kansas (14 percent) and the nation (16 percent). Furthermore, during the 1980s, per capita personal income in the region grew faster than in the state or the nation. As a further example of the region's prosperity, Johnson County has a median household income of over \$40,000 in 1989, \$10,000 more than any other county in the

state, and Leavenworth County is one of the few counties with a median household income above \$30,000.

Table 2
Private Employment in Kansas Regions
as a Percentage of State Total - 1990

	<u>North East Region</u>	<u>North Central Region</u>	<u>North West Region</u>	<u>South West Region</u>	<u>South Central Region</u>	<u>South East Region</u>
Mining	6.4*	9.8*	14.6*	19.8*	40.4	6.8*
Construction	42.7	13.0	3.9	7.9	25.9	6.6
Manufacturing	31.0	10.2	1.3	7.2	39.6	10.6
Transportation/Public Utilities	47.2*	9.9	3.2	8.8	21.1*	7.7*
Wholesale Trade	47.1	10.9	4.3	9.5	23.5	4.6
Retail Trade	41.1	13.2	4.4	7.9	26.7	6.8
Finance, Ins., & Real Est.	51.7	10.5	3.2	6.0	23.2	5.2
Services	43.6	12.1	3.8	6.7	28.8	5.6

Source: Bureau of Economic Analysis, Table CA 5

Note: An Asterisk indicates that the category employment data for at least one county in the region was suppressed by the BEA. For example, about 2.2 percent of the mining employment data was suppressed. Thus, the percentage of mining employment in any region with an asterisk could be as much as 2.2 percentage points higher than the number given. Similarly, a region's percentage of the state's employment in transportation and public utilities could be as much as 2.1 percentage points higher than the number given if an asterisk appears. There was some suppression of data for the manufacturing, wholesale trade, F.I.R.E., and Services sectors as well, but the total suppression in any of these categories was less than 0.3 percent of the total; it was felt that this was too small to effect the results in any significant way, so no asterisks were used in the table for those sectors.

The Northeast region appears to have a strong competitive position relative to the state and the nation. As Table 2 illustrates, in recent years that competitiveness has been especially evident in the areas of services and service type industries (such as retail trade and finance, insurance, and real estate). The region's strong competitiveness has created growth in these in these sectors well above the national levels, allowing the Northeast region to maintain very large shares of the state's employment in these industries. A substantial portion of the growth in the services area has been in the high paying business services sector in Johnson County. The

region's high level of competitiveness in recent years, coupled with its highly educated and skilled labor force, suggests that the long-run outlook for this region is very bright.

The North Central region is more typical of non-metropolitan areas of the state. It has less industrial activity than is found in most urban areas of the state, and it has in general grown more slowly than the state. The employment structure of the region indicates that it is more dependent on agriculture and government employment and less dependent on private non-farm employment. Government, largely due to the presence of two state universities and a major military post, accounts for over one fourth of the employment and 18 percent of personal income in the region, compared to only 18 percent of employment and 12 percent of personal income in the state as a whole. Manufacturing, on the other hand, accounts for less than 10 percent of the region's employment, compared to 13 percent for the state. Tables 1 and 2 further illustrate this trend. The region accounts for 13.9 percent of total employment in the state, but holds significantly higher shares of farm and government employment. In every category of non-farm private employment, however, the regional share is below that of total employment.

The general trend of stagnation in the region can also be seen in income. Per capita personal income in the region was about \$15,500 in 1990, compared to over \$18,000 for the state as a whole. Although the manufacturing sector has shown employment growth at above the national rate in recent years, nothing in the recent history of the region suggests a level of general competitiveness that would imply strong growth in the near future,

The Northwest region, which has under performed the state for two decades, is a region of declining and aging population, growing levels of transfer payments, and low levels of wage and salary income. From 1980 to 1990, the fraction of income from wages and salaries in the region declined, while the fraction of income from transfer payments increased. The region's decline during the second half of the decade was especially severe, with nearly every sector growing more slowly than its national counterpart. The only industries in which the region holds a significant portion of state employment are mining and farm employment (See Tables 1 and 2). Although some indication exists that mining employment may increase from new oil and gas exploration, neither of these sectors is likely to create significant growth in the region. There seems to be little reason to expect that the lack of competitiveness of the region that is evidenced by these below average growth rates and low shares of state employment will disappear in the near future.

The Southwest region was reasonably competitive during the first half of the 1980s, but suffered a significant loss in competitiveness during the later half of the decade. The region receives a disproportionately large share of the state's farm proprietor's income, and has a disproportionately large share of the state's agricultural employment.. Other areas on which the region's economy is more dependent than the state are mining and state and local government. On the other hand, the region is less dependent on manufacturing, finance, insurance and real estate, services and the Federal Government than the state as a whole (See Tables 1-2) . The only industry in which the region has shown a significant increase in competitiveness has been meat processing. Although this has led to growth in the region's manufacturing sector and will probably continue to do so, a strong diversified manufacturing base with the potential for much future growth has not been created. The region's decline in competitiveness in most sectors in recent years presents a less than optimistic outlook for the region in the near future. The strong reliance of the region on farming and farm related industries, mining, and state and local government does little to dispel this notion.

The South Central region contains more than a fourth of the population and accounts for more than a fourth of the state's personal income. Nearly 40 percent of the state's manufacturing jobs are in the region (See Table 2), with the aircraft industry in Wichita accounting for a large fraction of the region's manufacturing employment. The importance of the region's manufacturing sector is further evidenced by the fact that out of every \$100 earned in manufacturing in the state, nearly \$46 is earned in the South Central region. In many ways the region is dominated by Sedgwick County, which has about two thirds of the region's personal income. Per capita personal income in the region exceeded that of the state during 1980's although the size of the gap decreased throughout the period. Manufacturing appears to have the greatest competitive advantage in the region. In general the areas outside Sedgwick County have been hit hard by the declines in general aviation, farm land prices, and gas and oil prices, and recovery from the effects of these declines will probably be a slow process.

For the Southeast region the decade of the 1980s was a period of stagnation, with employment declining slightly in both halves of the decade, and real personal income only slightly higher in 1990 than it was in 1980. As a result, the region experienced a significant outmigration of people between the ages of 15 and 24 during the decade. The three major sectors of the region's economy in 1990 were government, services, and manufacturing, each

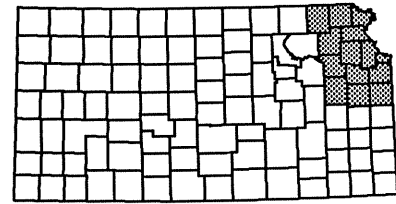
accounting for between 18 and 19 percent of employment in the region. These three sectors all grew during the 1985-1990, period, but their increases were more than offset by employment declines in farming, mining, construction, transportation and utilities, and finance, insurance, and real estate. In general, the competitiveness of the region has been weak in most sectors during the last five years, as is evidenced by the low regional employment shares shown in Tables 1 and 2. The only two sectors in which the region seems to show some competitiveness on the state level are manufacturing and agriculture. National trends indicate that agriculture is not likely to show significant future growth and regional employment growth in the manufacturing sector is not expected. Thus it is difficult to point to a single area in the private sector that might pull the region out of its decline.

A general conclusion can be drawn from the data in Tables 1 and 2 that helps to further distinguish the stagnating regions from those that have shown significant growth. The four regions that have grown very little over the last twenty years all have a share of the state's private nonfarm employment that is lower than their share of total employment. For the two growing regions, on the other hand, the opposite is true. The Northeast and South Central regions have maintained growth by becoming competitive in private industries outside of the agricultural sector. In South Central Kansas growth has come from manufacturing; In the Northeast it has come from service type industries. With a few exceptions, in the other four regions significant employment outside of the agricultural, government and mining sectors has not been created.

Northeast Kansas

by

Robert H. Glass



Introduction

The frame of reference of this report is the recent past, the present and the emerging future of the Northeast Kansas economy. This report is designed to depict the dynamic changes that have occurred in the recent past and are shaping the present; to portray the current situation and what it suggests about the future; and to forecast the immediate future and envision what seems probable in the more distant future. The body of this report consists of four sections. The first section provides a brief description of the Northeast Kansas Region. The second section outlines the changes in population in the Northeast Kansas Region. The population growth and age structure of the region are evaluated for the state, the region and the sub-regions. The third section analyzes the evolution of the Northeast Kansas economy over the past couple of decades, describes the economy today, and explores how the region's economic growth has been dispersed among the population. The final section of this report is concerned with the short-run and long-run future of Northeast Kansas. Short-run econometric forecasting models are used to generate a near-term forecast for the region, while longer run projections are based on shift-share analysis.

The Northeast Kansas Region

The trend that makes itself evident throughout this report is that Northeast Kansas has been and continues to be the driving force in the state economy. This trend becomes especially clear if the economic performance of the state is examined with the Northeast excluded, revealing that the rest of the state has experienced relative stagnation in income, employment, and population growth. Northeast Kansas, on the other hand, has enjoyed increasing employment, a growing population, and regional personal income that is at a level above both the state and national averages and continues to grow.

In order to verify the importance of the Northeast region to the state, one needs only to look at the fraction of the state's growth that has taken place within the region. For example, the region accounted for 90 percent of the state's population growth between 1980 and 1990. If we

look at employment we find a similar dominance; of the state's employment growth from 1980 to 1990, 72 percent occurred in the Northeast region. If we look at income, we again see that the region was the major growth area of the state in the 1980s. Of the state's real (i.e., adjusted for inflation) personal income growth during the period, 56 percent occurred in the Northeast region. The region's proportion of state income growth is even greater if we look at real non-farm personal income; the Northeast region accounted for 58 percent of Kansas' growth in that category. If we look at real earned income (wages and salaries, other labor income, and proprietors' income), which is probably a better measure of real economic activity than the previous two income categories, we find that the region accounted for 65 percent of the state's growth in real earned income. Finally, if we look just at real wages and salaries, the Northeast region accounted for 83 percent of Kansas' growth between 1980 and 1990.

The data in the previous paragraph convincingly buttress the statement that Northeast Kansas is the engine of Kansas economic growth. However, Northeast Kansas is not a homogeneous region and the economic growth of the region has not been distributed evenly. A variety of patterns of economic development has emerged within the region during this century, a fact of some relevance for economic forecasting. For example, eight of the fourteen counties in this region had a higher population count in 1900 than in 1990. Johnson County, which by 1990 had nearly 200,000 more people than the next largest county in the area, ranked eleventh regionally in the 1900 population figures.

In order to illustrate the diversity within the region and accurately describe patterns of growth, I have delineated four basic types of economies in the region. First, the northern border counties have an older population that is declining in number, and have experienced slower per capita personal income growth than the state as a whole. Second, Johnson and Wyandotte counties are part of the core of the Kansas City economy. Third, the Topeka and Lawrence economies are dominated by large, state institutions. Fourth, several less populated counties are strongly dependent upon the larger, nearby economies.

This sketch of Northeast Kansas suggests grouping the counties into four sub-regions, a strategy that I have used in forecasting the Northeast Kansas economy. The four sub-regions include: the Northern Tier, four rural counties in the northern part of the region; the WyJon Area, four counties in the Kansas City area; the Douglas-Franklin Area, including Douglas and

Franklin County; and the Topeka Area, including the counties near the Capital. A more detailed description of each sub-region can be found in the appendix.

Population

Population Growth

Over the past century, population in Kansas has consistently grown at a slower rate than U.S. population. This trend continued in the 1980s with U.S. population growing 9.8 percent and Kansas population growing at 4.8 percent. However, during that same decade, Northeast Kansas population grew 11.9 percent while the population in the Rest of Kansas (that part of Kansas which is not part of Northeast Kansas) grew at a rate of 0.8 percent. To put this in perspective, the state's population increased 113,338 from 1980 to 1990 while Northeast Kansas' population increased 102,320. Of all the major regions of Kansas, the Northeast has the fastest growing population.

The sub-regions of Northeast Kansas with the fastest growing population were the Douglas-Franklin Area (15.7 percent) and the WyJon Area (16.5 percent). The population of the Topeka Area grew moderately (3.3 percent) and the Northern Tier was the only sub-region with a declining population (-8.2 percent). Of the slightly more than 100,000 increase in population in Northeast Kansas, about 85,000 occurred in Johnson County. Douglas County's population increased about 14,000 and Leavenworth County's population increased almost 10,000. The northeastern county losing the greatest population was Wyandotte County (-10,000). Table NE-A1 in the Appendix contains the 1980 and 1990 population counts for the U.S., Kansas, Northeast Kansas, the Rest of Kansas, the sub-regions of Northeast Kansas, and the individual counties of Northeast Kansas.

Age Structure

The age structure of a society is the distribution of the population by longevity. To facilitate analysis of age structure, demographers have developed population mountains, bar graphs which display the age structure of a society.¹ Figures NE-1 through NE-4 are examples

¹ For a popular explanation see Judith Waldrop, "Secrets of the Age Pyramids," *American Demographics*, August 1992, pp. 46-52. When gender distinctions are also included the mountains for each sex are turned their sides to form a pyramid.

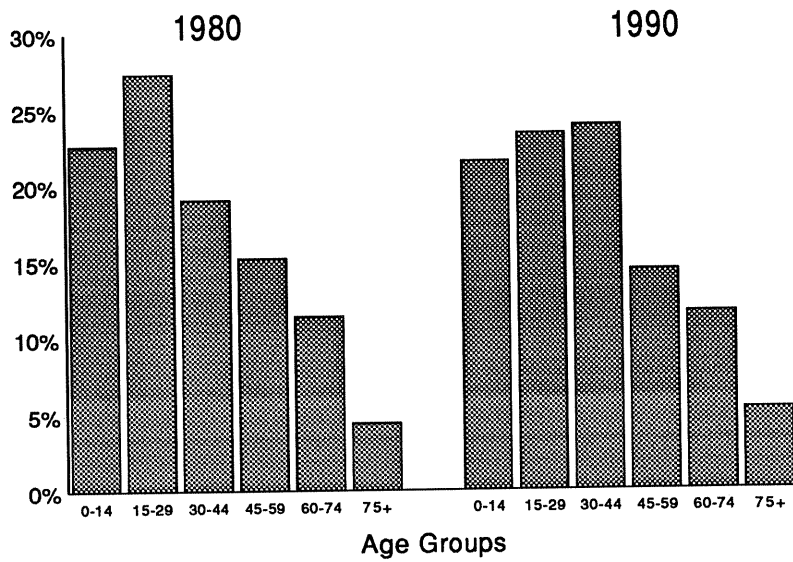
of such age mountains. A society's age structure may have an important effect on economic change. A region with a distribution weighted more heavily towards the ages between 15 and 60, the ages where people are most likely to be working and less likely to collect government entitlements, is likely to be more competitive than a region with a higher percentage of the very young and very old.

Figures NE-1 and NE-2 illustrate the age structure of the U.S. and Kansas economies for 1980 and 1990. The impact of the baby boom generation is clearly apparent for both the U.S. and Kansas. The median age for the U.S. and Kansas is the same in 1990 (32.9 years) and nearly the same in 1980 (30.0 for the U.S. and 30.1 for Kansas). But the population mountains illustrate the difference in the age structure between the two. In 1990, 38.3 percent of the U.S. population was below 15 years of age or at or above 60 years of age while in Kansas the figure was 40.8 percent. Despite the U.S. and Kansas having the same median age, the 2.5 percent higher proportion of Kansas citizens outside the ages usually associated with strong earning power now and into the immediate future, acts as a drag on Kansas economic growth.

Figures NE-3 and NE-4 depict the age structure of Northeast Kansas and the Rest of Kansas. Again the influence of the baby boom generation is clearly visible for Northeast Kansas and the Rest of Kansas. However, note the relative flatness of the population mountain for the Rest of Kansas compared to Northeast Kansas. In 1990, 38.0 percent of the Northeast Kansas population was below 15 years of age or at or above 60 years of age while in the Rest of Kansas the figure was 42.6 percent. With this type of age structure advantage, one would expect Northeast Kansas to continue out-performing the Rest of Kansas for at least the next decade.

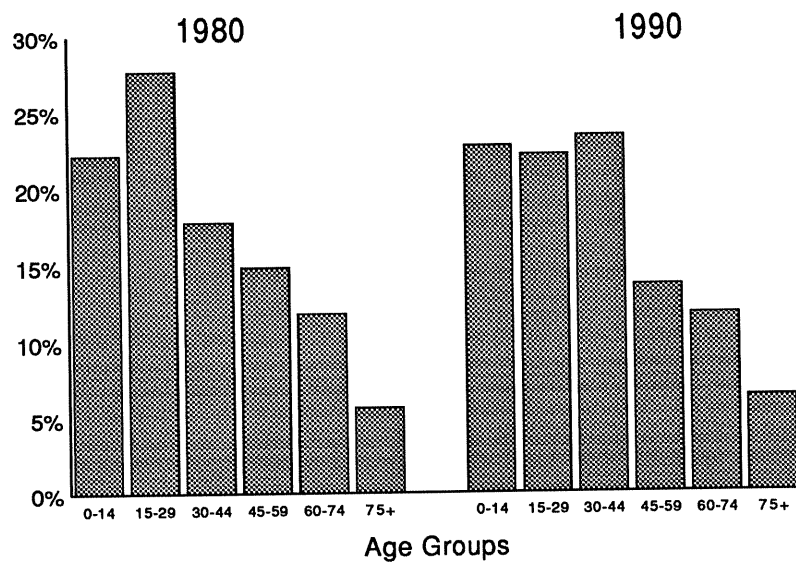
Among the sub-regions of Northeast Kansas, the Douglas-Franklin Area had the largest percentage of population between 15 and 60. The WyJon Area also had a larger percentage of its population in this range than either Kansas or the U.S. The Northern Tier had a significantly higher percentage of its population over 60 and thus had the smallest percentage of its population in the 15 to 60 category among the sub-regions. The population mountains for the sub-regions of Northeast Kansas can be found in the Appendix as Figures NE-A1 through NE-A4.

Figure NE-1
Age Structure of United States



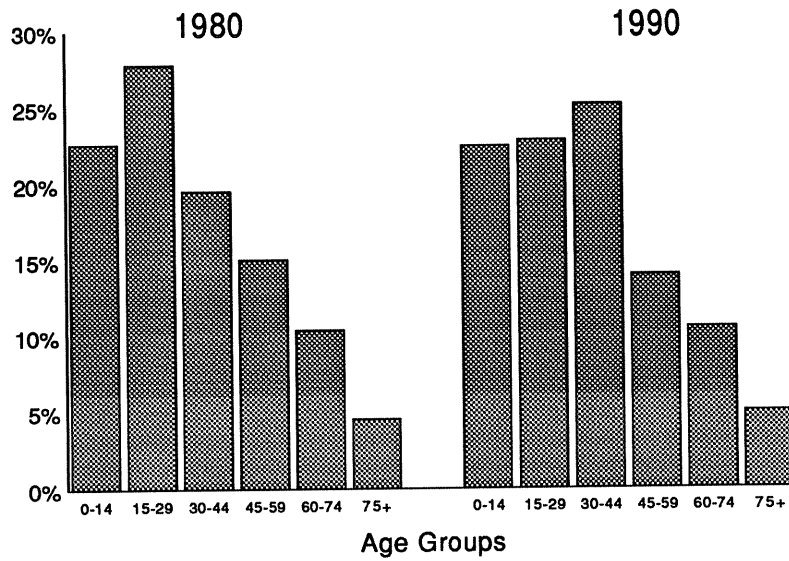
Source: Bureau of the Census, 1990 Census of Population and Housing

Figure NE-2
Age Structure of Kansas



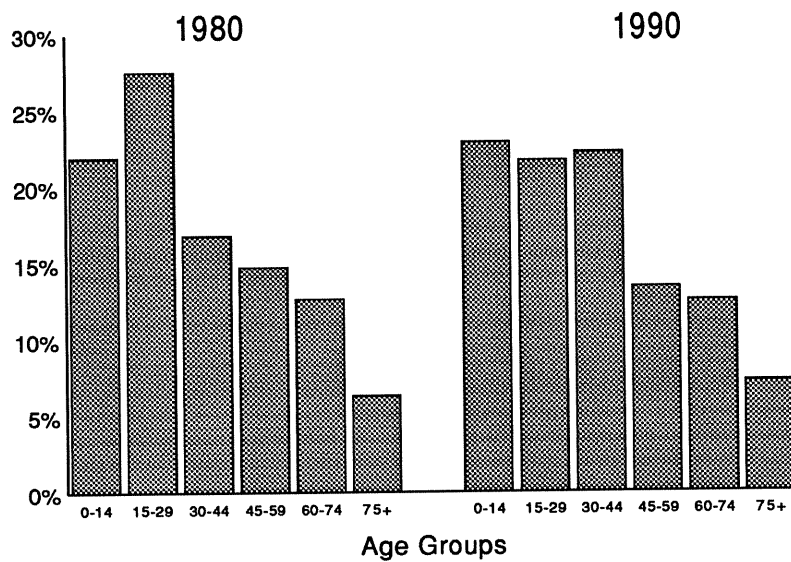
Source: Bureau of the Census, 1990 Census of Population and Housing

Figure NE-3
Age Structure of Northeast Kansas



Source: Bureau of the Census, 1990 Census of Population and Housing

Figure NE-4
Age Structure of the Rest of Kansas



Source: Bureau of the Census, 1990 Census of Population and Housing

The Evolving Economic Structure of Northeast Kansas

Sources of Personal Income

Several features of the Kansas and the Northeast Kansas economies become evident from the state and regional sources of personal income given in Table NE-1.² First, from 1970 to 1990, the Kansas economy became less agricultural.³ If we measure the importance of a sector by its percentage of total personal income, then in 1970 farm income was about 3.2 times as important to the Kansas economy as it was to the national economy.. By 1990, the importance of agriculture had dropped for both the nation and Kansas, but its importance in Kansas fell faster than in the U.S., so that the ratio of importance had fallen to 2.8 Second, Northeast Kansas has a smaller percentage of income coming from the agricultural sector than Kansas, or the U.S., while the Rest of Kansas is decidedly more dependent upon the agricultural sector than the U.S. Third, the Rest of Kansas has a greater percentage of total personal income coming from dividends, interest, and rent; transfer payments; and earned income than Northeast Kansas. The fact that earned income is a greater fraction of personal income in the Rest of Kansas than in Northeast Kansas may seem surprising, but is explained by the fact that earned income includes proprietors', in particular, farm proprietors' income; earned income less proprietors' income is a significantly larger fraction of personal income in Northeast Kansas than in the rest of the state. Fourth, work in the private sector and the government sector accounts for a larger portion of personal income in Northeast Kansas than in the Rest of Kansas. The large portion of personal income from the government sector comes from the Topeka, Douglas-Franklin, and WyJon Areas. The large portion of personal income from the government sector is clearly because of Shawnee County (the state capital), Douglas County (the University of Kansas), and Leavenworth (Ft. Leavenworth), a fact that can be verified by looking at Table NE-A3 in the Appendix, which has

² The personal income data from the Bureau of Economic Analysis (BEA) classifies personal income by type of income. This classification can be used to delineate the basic sources of income in an economy. Table I contains the sources of personal income (in 1990 dollars) by broad categories for the U.S., Kansas, Northeast Kansas, and the Rest of Kansas for 1970, 1980, and 1990. The 1970 and 1980 personal income figures for the U.S. have been inflated using the U.S. Consumer Price Index (CPI). For the remaining units, the personal income figures were inflated using the Kansas City CPI.

³ The 1980 farm income figures present a distorted portrait of Kansas agriculture because 1980 was a bad year for agriculture. The years 1970 and 1990 appear to be more typical years for Kansas agriculture, unlike extraordinarily good years such as 1972 and 1973 and extraordinarily bad years like 1988 and 1989.

the structures of all the individual counties. Table NE-A2 in the Appendix has personal income by broad categories for the four subregions.

Personal Income Growth

Due to the severe recession at the beginning of the 1980's and the sustained growth of the second half of the 1980's until the second quarter of 1990, real U.S. personal income grew faster in the second half of the decade (15.7 percent) than in the first half (12.7 percent). This was also true of the Kansas economy, but the Kansas growth rates for each half of the decade were less than the U.S. growth rates (13.5 percent and 11.4 percent for the second and first halves of the decade, respectively). However, from 1988 on Kansas has had a higher real growth rate than the U.S. Separating Kansas into Northeast Kansas and the Rest of Kansas, we find that Northeast Kansas outperformed the U.S. economy during the first half of the decade while the Rest of Kansas did not; real personal income in the Northeast grew 14.7 percent while real personal income in the rest of the state grew only 9.3 percent. During the second half of the decade of the 1980's, personal income grew 20.9 percent in Northeast Kansas, exceeding U.S. growth by more than 6 percentage points. For the Rest of Kansas the growth in the second half of the decade actually slowed to 8.7 percent from its growth in the first half of the decade. Table NE-A4 in the appendix has the real personal income growth rates for the U.S., Kansas, Northeast Kansas, the Rest of Kansas, and the four sub-regions of Northeast Kansas.

Per Capital Personal Income

If population is growing at a faster rate than income, or if growth in income is concentrated in a few hands, economic growth can occur without the majority of the population becoming better off. The growth rate of personal income does not completely capture the impact of economic growth. Another important factor, some might argue the most important factor, is the growth rate of per capita personal income (PCPI). Although as noted above, U.S. personal income grew at a faster rate than Kansas personal income in each half of the 1980's, in both halves of the decade Kansas PCPI grew faster than U.S. PCPI; Kansas real PCPI grew 8.8 percent from 1980 to 1985, compared to 7.6 percent for the U.S, and it grew 11.1 percent from

Table NE-1
The Structure of Regional, State and U.S. Economies
Based on Personal Income (in thousands of 1990 dollars)

	<u>1970</u>	<u>% of Total</u> <u>Personal</u> <u>Income</u>	<u>1980</u>	<u>% of Total</u> <u>Personal</u> <u>Income</u>	<u>1990</u>	<u>% of Total</u> <u>Personal</u> <u>Income</u>
UNITED STATES						
Total Personal Income	2,780,858,088		3,575,336,568		4,664,057,000	
By Place of Residence						
Nonfarm Income	2,718,603,791	97.8%	3,529,355,229	98.7%	4,604,268,000	98.7%
Farm Income	62,254,296	2.2%	45,981,339	1.3%	59,789,000	1.3%
Dividends, Interest, Rent	369,358,874	13.3%	525,680,476	14.7%	811,058,000	17.4%
Transfer Payments	289,497,131	10.4%	517,579,931	14.5%	698,730,000	15.0%
By Place of Work						
Earned Income	2,215,681,644	79.7%	2,672,840,379	74.8%	3,380,256,000	72.5%
Wages & Salaries	1,836,921,129	66.1%	2,166,998,069	60.6%	2,719,431,000	58.3%
Other Labor Income	109,410,722	3.9%	219,385,660	6.1%	257,857,000	5.5%
Proprietors Income	269,349,794	9.7%	286,456,649	8.0%	402,968,000	8.6%
Private Sector	1,774,764,521	63.8%	2,206,485,648	61.7%	2,785,471,000	59.7%
Government Sector	378,662,827	13.6%	420,373,392	11.8%	534,996,000	11.5%
KANSAS						
Total Personal Income	27,375,212		35,515,900		44,906,214	
By Place of Residence						
Nonfarm Income	25,423,430	92.9%	35,002,964	98.6%	43,252,349	96.3%
Farm Income	1,951,782	7.1%	512,936	1.4%	1,653,865	3.7%
Dividends, Interest, Rent	3,551,494	13.0%	5,683,408	16.0%	8,491,473	18.9%
Transfer Payments	2,853,968	10.4%	4,685,970	13.2%	6,432,465	14.3%
By Place of Work						
Earned Income	20,457,774	74.7%	25,412,931	71.6%	30,936,155	68.9%
Wages & Salaries	15,078,643	55.1%	20,052,697	56.5%	23,463,957	52.3%
Other Labor Income	847,360	3.1%	2,040,059	5.7%	2,306,656	5.1%
Proprietors Income	4,531,771	16.6%	3,320,175	9.3%	5,165,542	11.5%
Private Sector	14,583,973	53.3%	20,813,577	58.6%	23,951,685	53.3%
Government Sector	3,922,018	14.3%	4,086,418	11.5%	5,330,605	11.9%

	<u>1970</u>	% of Total Personal Income	<u>1980</u>	% of Total Personal Income	<u>1990</u>	% of Total Personal Income
NORTHEAST KANSAS						
Total Personal Income	10,263,811		13,649,799		18,924,733	
By Place of Residence						
Nonfarm Income	10,093,866	98.3%	13,667,535	100.1%	18,825,492	99.5%
Farm Income	169,945	1.7%	(17,736)	-0.1%	99,241	0.5%
Dividends, Interest, Rent	1,322,651	12.9%	2,042,504	15.0%	3,524,080	18.6%
Transfer Payments	928,352	9.0%	1,676,939	12.3%	2,269,059	12.0%
By Place of Work						
Earned Income	6,987,650	68.1%	9,319,489	68.3%	12,889,377	68.1%
Wages & Salaries	5,728,500	55.8%	7,668,453	56.2%	10,502,022	55.5%
Other Labor Income	306,749	3.0%	739,834	5.4%	965,289	5.1%
Proprietors Income	952,402	9.3%	911,202	6.7%	1,422,066	7.5%
Private Sector	5,246,562	51.1%	7,639,850	56.0%	10,432,110	55.1%
Government Sector	1,571,142	15.3%	1,697,375	12.4%	2,358,026	12.5%
REST OF KANSAS						
Total Personal Income	17,111,401		21,866,102		25,981,481	
By Place of Residence						
Nonfarm Income	15,329,564	89.6%	21,335,429	97.6%	24,426,857	94.0%
Farm Income	1,781,837	10.4%	530,673	2.4%	1,554,624	6.0%
Dividends, Interest, Rent	2,228,843	13.0%	3,640,904	16.7%	4,967,393	19.1%
Transfer Payments	1,925,616	11.3%	3,009,031	13.8%	4,163,406	16.0%
By Place of Work						
Earned Income	13,470,124	78.7%	16,093,442	73.6%	18,046,778	69.5%
Wages & Salaries	9,350,143	54.6%	12,384,243	56.6%	12,961,935	49.9%
Other Labor Income	540,611	3.2%	1,300,225	5.9%	1,341,367	5.2%
Proprietors Income	3,579,369	20.9%	2,408,974	11.0%	3,743,476	14.4%
Private Sector	9,337,411	54.6%	13,173,727	60.2%	13,519,575	52.0%
Government Sector	2,350,876	13.7%	2,389,043	10.9%	2,972,579	11.4%

Source: Bureau of Economic Analysis, Table CA 5.

1985 to 1990, compared to 10.4 percent for the U.S.. The obvious reason for the reversing of order in the growth rates is that from 1980 to 1990, the U.S. population grew 9.8 percent while Kansas grew only 4.8 percent.⁴

Not only did population in Northeast Kansas grow faster than in the state or the nation, but PCPI also grew faster than in the state or the nation. From 1980 to 1990, real per capita personal income grew 18.8 percent in the U.S. and 20.9 percent in Kansas. During the same period, real PCPI grew 23.9 percent in Northeast Kansas and only 17.9 percent in the Rest of Kansas. Within Northeast Kansas, only in the Douglas-Franklin Area did PCPI grow more slowly than the nation and the state (13.8 percent). The region with the fastest growing PCPI was the Northern Tier (36.4 percent). However, farm income is a disproportionately large segment of the Northern Tier's economy and it is prone to extreme volatility. From 1980 to 1990 farm income in the Northern Tier grew from negative \$8,850,000 to \$45,115,000. The growth rate of only non-farm income from 1980 to 1990 was 15.5 percent and per capita non-farm income only grew 23.7 percent. The Topeka Area PCPI and the WyJon Area PCPI grew 21.5 percent and 24.3 percent respectively.

The growth in personal income and per capita personal income for the fourteen counties in Northeast Kansas is given in Table NE-A5 in the Appendix. The four counties in the Northern

⁴ The reader may have also noted that no growth rates in PCPI are given in Table A-IV in the Appendix for Northeast Kansas, the Rest of Kansas, or the sub-regions. The reason for this omission is the inability to produce estimates of PCPI compatible with the BEA estimates for the U.S., states and counties. The regional growth rates for personal income are the result of aggregating personal income for the particular counties in the region and then determining the growth rates. Clearly, regional PCPI cannot be determined by aggregating PCPI for counties in the region. It would seem that one could easily aggregate personal income and population, which is also given by BEA, and then determine PCPI at the regional level. The BEA provides estimates of population at the hundreds of inhabitants level; for example, 2.3 thousand persons. But, when the BEA estimates PCPI they use the whole estimate of population down to the inhabitant. Thus, even with BEA estimates of personal income and population for a county, state or the U.S., one cannot duplicate the estimate of PCPI given by BEA.

Furthermore it is impossible even in census years to duplicate BEA PCPI estimates, using the population estimates from the Census Bureau that are to the person, because the published census estimates are derived from the April 1 census. However, BEA uses a population estimate for July 1, so they re-estimate the population for the year. Thus, even with Census Bureau population estimates for 1980 and 1990, nobody but BEA can duplicate their estimates of PCPI. Given these restrictions, the estimates of PCPI I derived by using Census Bureau population estimates in 1980 and 1990 should be reasonably close.

Tier had very strong growth rates in the first half of the 1980's, in large part because of the poor agricultural performance in 1980, and had much weaker growth rates in the second half of the decade. Among the more populous counties, Johnson County had the best growth rates in both personal income and PCPI. Thus, although the aggregate growth rates for Northeast Kansas are better than the U.S. or the Rest of Kansas, the areas of strong growth in personal income were Douglas and Johnson counties, and only in Johnson County did non-farm per capita income increase at a strong rate.

Income Distribution

A limitation of using PCPI data is that it conceals the distribution of income in a community. At the aggregate level, a wide separation in income levels is averaged and the whole structure of distribution could be hidden. However, with each census, the Bureau of the Census provides a median household income for each county and a distribution of household income by several different income classes. The household income estimates for Kansas and the counties of Northeast Kansas are provided in Table NE-A6 in the Appendix. In terms of median household income, the wealthiest county in the state is Johnson County. It is the only county in the state with a median income greater than \$40,000. In fact, Johnson County's median income is about \$10,000 more than any other county in the state. Leavenworth County is one of the few counties in the state with median household income greater than \$30,000. Another indication of the wealth of Johnson County is the number of households with income of more than \$150,000. Although Johnson County has 14.3 percent of the state's population, it has 45.5 percent of the households with income of more than \$150,000. By comparison, Douglas County, a county which experienced substantial growth during the 1980's, has 3.3 percent of the state's population but only 2.8 percent of the household's with income of more than \$150,000.

The Outlook for Northeast Kansas

Short-run Forecast

The short-run outlook for Northeast Kansas is based on econometric forecasting and is quantitative in nature. A description of the forecasting models can be found in the Appendix. The forecasts for each of these sub-regions, Northeast Kansas, Kansas, and the Rest of Kansas

are given in Table NE-2. In addition, the first portion of Table NE-2 has a comparison of total non-farm wage and salary employment between these areas and the U.S. In 1992 and 1993,

Kansas is expected to continue out performing the U.S. economy as it has for the last few years. Over the last few decades, Northeast Kansas has nearly always outperformed the Kansas economy and most of the time it has outperformed the U.S. economy. This is also expected to happen in 1993, although Northeast Kansas is anticipated to grow at a slower rate in 1993 than in 1992. For most years, the WyJon Area is the fastest growing sub-region in the area, but in 1992 it shares the lead with the Douglas-Franklin Area, and in 1993 the Topeka Area is expected to be the fastest growing area. Growth in the Lawrence Area in 1993 is expected to fall to slightly more than half of growth in 1992. The area expected to do the worst in 1993 is the Northern Tier with a meager increase of 0.1 percent in non-farm wage and salary employment. Relative to the U.S. economy and the Kansas economy, the immediate future of the Northeast economy looks encouraging.

Long-run Model of Relative Competitiveness

The long-run outlook for the Northeast Kansas region was developed in two stages. The first stage consisted of using shift-share analysis to assess the relative economic competitiveness of Kansas, Northeast Kansas, the Rest of Kansas, and five of the largest counties in Northeast Kansas. In the second stage, these assessments of the relative economic competitiveness of the state and the different regions became the basis of projecting the relative strength of these economies during the decade of the 1990's.

Shift-share analysis views any difference between the regional growth rate and the national growth rate as arising from two sources. The first is the extent to which the region's mix of industries is different from the national mix, and the second is the extent to which the individual industries in the region grow at a rate that is different from their national counterparts. The measure of the first source is called the structural component, and the measure of the second source is called the differential, or competitive, component. The structural component is a measure of the effect of the difference between the structure of the national economy and the structure of the regional economy. If the structural growth rate is positive, then the structure of

Table NE-2
Forecast of Non-Farm Wage & Salary Employment
For U.S., Kansas, Northeast Kansas, And Sub-Regions (in thousands of employees)

Comparison of Total Wage & Salary Employment

	<u>1991</u>	<u>1992</u>	<u>Percent Change</u>	<u>1993</u>	<u>Percent Change</u>
U.S.	126691.8	126979.0	0.2	128169.8	0.9
Kansas	1095.1	1118.9	2.2	1137.1	1.6
Northeast Kansas	460.4	474.6	3.1	487.6	2.7
Rest of Kansas	634.7	644.4	1.5	649.5	0.8
Douglas-Franklin Area	44.5	46.0	3.4	46.8	1.8
Northern Tier Area	16.3	16.4	0.8	16.4	0.1
Topeka Area	99.5	101.5	2.0	104.5	3.0
WyJon Area	300.1	310.4	3.4	318.9	2.8

Area Sector Forecasts

KANSAS

Total Employment	1095.1	1118.9	2.2	1137.1	1.6
Mining & Construction	51.4	55.4	7.7	56.0	1.1
Manufacturing	183.9	182.9	-0.6	182.1	-0.5
Trans. & Pub. Util.	65.1	64.6	-0.7	65.1	0.7
Wholesale & Retail Trade	268.8	272.1	1.2	276.2	1.5
F.I.R.E.	58.3	58.1	-0.3	57.8	-0.6
Services	248.4	258.9	4.2	271.0	4.7
Government	219.1	226.9	3.5	229.1	1.0

NORTHEAST KANSAS

Total Employment	460.4	474.6	3.1	487.6	2.7
Mining & Construction	19.3	20.1	4.2	21.2	5.3
Manufacturing	57.1	58.5	2.6	59.5	1.6
Trans. & Pub. Util.	32.0	32.1	0.4	32.7	2.1
Wholesale & Retail Trade	117.3	120.2	2.5	122.8	2.2
F.I.R.E.	31.4	32.3	2.9	33.4	3.5
Services	114.2	119.5	4.6	124.5	4.2
Government	75.8	78.0	2.9	79.0	1.4

REST OF KANSAS

Total Employment	634.7	644.4	1.5	649.5	0.8
Mining & Construction	32.1	35.3	9.8	34.8	-1.2
Manufacturing	126.9	124.3	-2.0	122.6	-1.4
Trans. & Pub. Util.	33.1	32.6	-1.7	32.3	-0.7
Wholesale & Retail Trade	151.5	152.0	0.3	153.4	0.9
F.I.R.E.	26.9	25.9	-4.1	24.4	-5.7
Services	134.2	139.4	3.9	146.4	5.0
Government	143.3	148.9	3.9	150.0	0.7

	<u>1991</u>	<u>1992</u>	<u>Percent Change</u>	<u>1993</u>	<u>Percent Change</u>
DOUGLAS-FRANKLIN AREA					
Total Employment	44.5	46.3	4.0	47.7	3.1
Mining & Construction	1.7	1.7	2.7	1.8	3.5
Manufacturing	6.2	6.2	1.4	6.3	0.3
Trans. & Pub. Util.	1.3	1.2	-9.2	1.1	-6.4
Wholesale & Retail Trade	10.8	11.3	5.1	11.6	2.5
F.I.R.E.	1.9	1.9	2.5	1.9	0.9
Services	9.3	9.9	6.8	10.5	5.9
Government	13.4	13.9	4.1	14.5	4.0
NORTHERN TIER					
Total Employment	16.3	16.4	0.8	16.4	0.1
Mining & Construction	0.4	0.5	11.1	0.5	-3.5
Manufacturing	3.5	3.3	-3.5	3.2	-3.4
Trans. & Pub. Util.	0.9	0.8	-15.0	0.7	-10.3
Wholesale & Retail Trade	4.0	4.0	-0.2	4.0	0.8
F.I.R.E.	0.6	0.6	3.3	0.7	5.7
Services	3.4	3.5	2.2	3.5	0.9
Government	3.4	3.7	7.3	3.8	3.4
TOPEKA AREA					
Total Employment	99.5	101.5	2.0	104.5	3.0
Mining & Construction	3.9	4.2	7.3	4.7	10.1
Manufacturing	10.2	10.6	3.7	11.4	7.5
Trans. & Pub. Util.	6.5	6.5	0.6	6.8	3.9
Wholesale & Retail Trade	21.9	22.3	2.0	22.9	2.8
F.I.R.E.	6.8	6.9	1.3	7.1	3.7
Services	25.0	25.8	3.1	26.4	2.4
Government	25.2	25.1	-0.1	25.2	0.2
WYJON AREA					
Total Employment	300.1	310.4	3.4	318.9	2.8
Mining & Construction	13.2	13.6	3.2	14.2	4.4
Manufacturing	37.3	38.4	3.0	38.6	0.6
Trans. & Pub. Util.	23.2	23.6	1.5	24.1	2.4
Wholesale & Retail Trade	80.6	82.5	2.4	84.2	2.0
F.I.R.E.	22.1	22.8	3.4	23.6	3.6
Services	76.5	80.3	5.0	84.1	4.7
Government	47.2	49.1	4.1	50.0	1.8

the regional economy is such that it enhanced the growth of the region; if it is negative it hindered the growth of the region. Since the differential component is based on the amounts by which the growth rates of the region's industries exceed the national growth rates of those industries, it is associated with the relative advantage that the region has in competing in the national economy. If the differential growth rate is positive, then the region is usually described as having an advantage over the rest of the country. If the differential growth rate is negative, then the region is thought to be competing poorly with the rest of the country. Thus, one can see why the differential component is sometimes called the competitive component. A formal description of shift-share analysis is provided in the Appendix. Although numerous authors have warned against over interpretation of shift-share analysis results, and the use of these results as a basis for policy, in this report, shift-share analysis is used only as an accounting device.⁵

The aggregate shift-share analysis for Kansas, Northeast Kansas, and the Rest of Kansas can be found in Table NE-3. The detailed shift-share analysis for these regions and for five of the larger counties in Northeast Kansas can be found in Table NE-A7. For Kansas the structural component in both halves of the last decade was about zero. However the differential component went from -4.95 to -1.99, a significant drop in magnitude. Most of this change came from the improved differential component for Northeast Kansas, rather than for the Rest of Kansas. For Northeast Kansas the structural component was again almost zero, but for the period 1985 to 1990, the differential component increased from 1.18 to 5.11. Among the counties for which shift-share analysis was applied, Douglas County had the greatest change in the differential component: from -1.44 during 1980-1985 to 14.86 during 1985-1990. Johnson County had the largest differential components in both periods, 19.09 in 1980-1985 and 16.70 in 1985-1990, indicating that it was very competitive relative to the national economy.

Qualitative Projections

Most of the volatility in Northeast Kansas is not with the structural component, but with the differential component. Historically, this indicates that the growth or stagnation in the Northeast

⁵ For a recent review and critique of shift-share analysis see: Darryl R. Holden, Alasdair G.M. Naim, and J.K. Swales, "Shift-Share Analysis of Regional Growth and Policy: A Critique," *Oxford Bulletin of Economics and Statistics*, vol. 51, no. 1 (August, 1989): pp. 15-34.

Table NE-3
Shift-Share Analysis of Employment Growth
For Kansas, Northeast Kansas, and the Rest of Kansas

	<u>1980-85</u>	<u>1985-90</u>
Growth Rate of Kansas	6.98%	9.47%
National Component	12.07%	12.40%
Structural Component	-0.14%	-0.93%
Differential Component	-4.95%	-1.99%
	1980-85	1985-90
Growth Rate of Northeast Kansas	14.07%	18.08%
National Component	12.07%	12.40%
Structural Component	0.82%	0.49%
Differential Component	1.18%	5.11%
	1980-85	1985-90
Growth Rate of the Rest of Kansas	3.04%	4.17%
National Component	12.07%	12.40%
Structural Component	-0.67%	-1.80%
Differential Component	-8.36%	-6.37%

Kansas economy is dependent upon the competitive advantage of the area rather than the structure of the economy. Also, a comparison of the 1980-1985 period to the 1985-1990 period indicates that for most Northeast Kansas counties, the situation is improving in terms of the differential component. Combined these two observations indicate that Northwest Kansas is not excessively burdened by declining sectors in its economy, and that the region's competitive position improved in the second half of the 1980's.

In terms of future performance, it is probably better for an economy to have a good competitive position than to have the right mix of industries. The right industry to be invested in can change rapidly, and the causes of many of these changes are not economic. For example, the economies of Texas, Louisiana and Alaska would all look much better if oil production was severely reduced by OPEC for some reason. Thus, the residents of Northeast Kansas have reason to be optimistic about the future. This is especially true of the residents of Johnson County. The

growth rates of the U.S., Kansas, Northeast Kansas, the Rest of Kansas, the sub-regions, and the counties of Northeast Kansas are in Table NE-A8.

A Sketch of the Labor Force

The projections for the future of Northeast Kansas are fairly optimistic because of its relative competitive advantage. One of the reasons for this advantage can be traced to the type of labor force and the skills of the labor force in the region. We can learn something of the makeup of the area labor force by looking at the occupations at which it is currently employed. A survey of such occupations appears in Table NE-A9. The portion of the labor force in managerial, professional and administrative and technical, sales and support is 8 percent greater than for the rest of Kansas. In Johnson County this group of workers represents 20 percent more of the labor force than in Kansas. Table NE-A10 indicates the greater educational accomplishments of the citizens of Northeast Kansas. This is also particularly true of Johnson County. Educational achievement and the ability to have that training updated appear to be fundamental elements for future economic growth. Finally, Table NE-A11 demonstrates that Northeast Kansas has a greater percentage of private sector employees than Kansas. Again, Johnson County has an even larger percentage of private sector workers. Future growth is probably not going to be fueled by public sector employment; most growth will likely be in the private sector. All of these indicators point to continued strong growth in Northeast Kansas and, in particular, Johnson County.

Appendix NE

Sub-Regions of Northeast Kansas

1. Northern Tier: Atchison, Brown, Doniphan and Nemaha counties. Nemaha, Brown and Doniphan border Nebraska, and Atchison is south of Doniphan and borders Missouri. The largest city in this sub-region is Atchison which is on the Missouri River. All four counties have had declining populations for several decades, have older populations, are more agricultural than the rest of Northeast Kansas, and have a lower per capita personal income than the state average.

2. WyJon Area: Johnson, Leavenworth, Miami and Wyandotte counties. These four counties make up the Kansas portion of the Kansas City Statistical Metropolitan Area (KCSMA). Leavenworth and Miami counties were added to the KCSMA in 1982. Since the employment data that is used to estimate the sub-regions already has this area's data aggregated, these counties must be forecasted in aggregate.

3. Douglas-Franklin Area: Douglas and Franklin counties. Douglas County is the Lawrence SMA. The link between Douglas and Franklin County can be documented by commuting statistics, etc., but this link is not Franklin County's only link, or necessarily its strongest link, to Douglas County. More residents of Franklin County commuted in 1980 to KCSMA and Topeka SMA for work than to Douglas County. The major reason for linking Douglas and Franklin counties is that they forecast better together than separately.

4. Topeka Area: Jackson, Jefferson, Osage, and Shawnee counties. Jefferson, Osage and Shawnee counties were the Topeka SMA until 1982 when Jefferson and Osage were eliminated and the Topeka SMA consisted of Shawnee County only. Again because the data I use for forecasting has these three counties aggregated until 1982, I keep these counties coupled. Jackson County borders Shawnee County and appears to have extensive links to Shawnee County in terms of commuting and retail sales area.

Some aspects of this partitioning of counties appears "natural" in some vague sense, while other aspects must appear arbitrary. This particular partition is based on perceived economic and cultural links given the limitations of the data available.

Short-run Model and Forecast Development

For each sub-region a small, simple econometric model was developed in 1988 to forecast the sub-region's non-farm wage and salary employment by place of work. The county level

employment data used in the estimation of the model were provided by Kansas Department of Human Resources. Two obvious, major groups not covered by this data are farm workers and self-employed people. Despite these omissions, this data has several advantages over personal income data. The non-farm employment data is available on a monthly basis which can be compressed to match the quarterly structure of the databases constructed for the national and Kansas models. County level personal income data is only available from the Bureau of Economic Analysis on an annual basis with 1990 the final year for which estimates have been made. Non-farm employment is available for all of 1991 and usually for part of 1992. Other conveniences of non-farm employment data include its availability at sectorial levels and the fact it does not need deflating. (Price indexes at the state and sub-state level do not exist in Kansas except for the Kansas portion of the Kansas City SMA.)

Seven variables were chosen to be forecasted in each region. These were manufacturing employment; mining and construction employment; transportation, communications, and public utility employment; wholesale and retail trade employment; finance, insurance, and real estate employment; services employment; and federal, state and local government employment. These seven variables add together to give total non-farm employment. The linear or log-linear equations for each variable were simultaneously estimated using Zellner's Seemingly Unrelated Regression estimation procedure. Each sub-region was estimated separately. The choice of exogenous variables was aided to some extent by the use of a Granger-Sims causality test. The particular form of the test used involved regression analysis with six lags of the endogenous variable and six lags of the exogenous variable being tested for "causality". Causality in this case means determining which variables are endogenous and which are exogenous with the assumption that exogenous variables "cause" change in endogenous variables. The F-test was used to determine if the six lags of the exogenous variable were significantly different from zero.⁶

The model equations were solved simultaneously and the forecasts were generated using the national and Kansas forecasts developed at the Institute for Public Policy and Business Research

⁶ For an explanation of how these models were created and for a description of their structure see: Robert Glass, "Northeast Kansas: Diversity and Development," *Kansas Business Review*, vol. 12, no. 2 (Winter 1988-1989): pp. 13-18. I would like to thank William Layes and Steven McAtee of the Department of Human Resources for providing the non-farm wage and salary employment data.

(IPPBR).⁷ Simulations of each of the sub-regional models were run to test the forecasting reliability of the model. The simulations involved splitting the data set: The model was estimated using the first part of the data set and then the estimated model generated forecast values for the same period as the second part of the data set, thus allowing a comparison of forecasted values with actual values. Estimating the parameters over different parts of the data set also provided a check on the consistency of the estimated parameter values.

Description of Shift-Share Analysis

Shift-share analysis divides a region's growth rate into three different components: a national component (N), a structural component (S), and a differential component (D). These components are sometimes given different names such as competitive component for differential component. I will give a brief mathematical description of these three components and how they are interrelated. First, let E^r be the total employment in a region and E_i^r be the employment in industry i . Then let e^r be a row vector representing the industrial structure of the regional economy with elements e_i^r defined by:

$$e_i^r = \frac{E_i^r}{E^r} \text{ so that } \sum_i e_i^r = 1.$$

Now let g^r be a column vector of regional growth rates with g_i^r representing the growth rate for the i th industry. The regional growth rate, G^r and the national growth rate G^n are then:

$$G^r = e^r \cdot g^r \text{ and } G^n = e^n \cdot g^n.$$

The regional growth rate is then separated into the three components of regional growth:

$$(1) \quad G^r = N + S + D.$$

The national component is simply the national growth rate, so $N=G^n$. The structural growth rate is the weighted aggregate growth rate of the regional economy, if each sector grew at the same

⁷ The forecast of the national economy is produced by the Econometric Model of the United States using assumptions assembled at (IPPBR). This model was developed at the Center for Econometric Model Research at the University of Indiana, R. Jeffery Green and Morton J. Marcus, directors. The Kansas forecast are produced by the Kansas Econometric Model, which is a product of IPPBR.

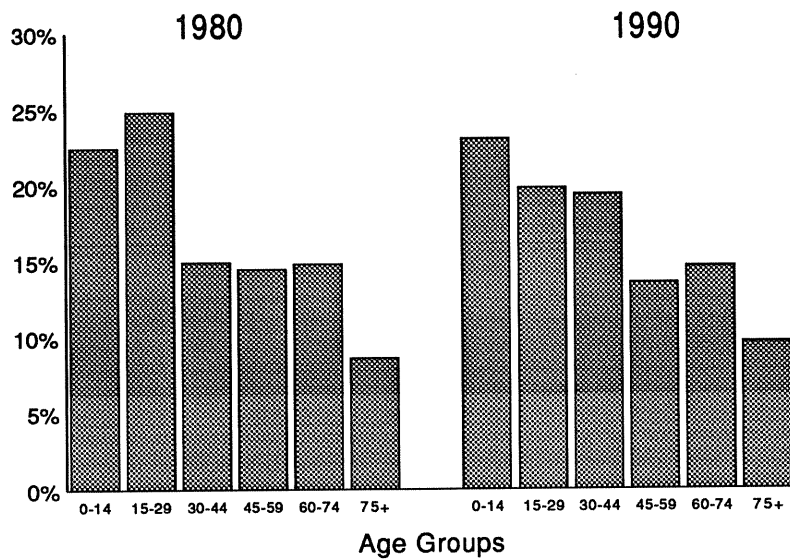
rate as the national growth rate for that sector, \hat{G}^r , minus the national growth rate. These growth rates are weighted by the share each sector is in the regional economy.

$$S = \hat{G}^r - G^n \text{ where } \hat{G}^r = e^r \cdot g^n, \\ \text{so, } S = e^r \cdot g^n - e^n \cdot g^n = (e^r - e^n) \cdot g^n.$$

Differential growth rate is the residual of subtracting the national growth rate and the structural growth rate from the regional growth rate.

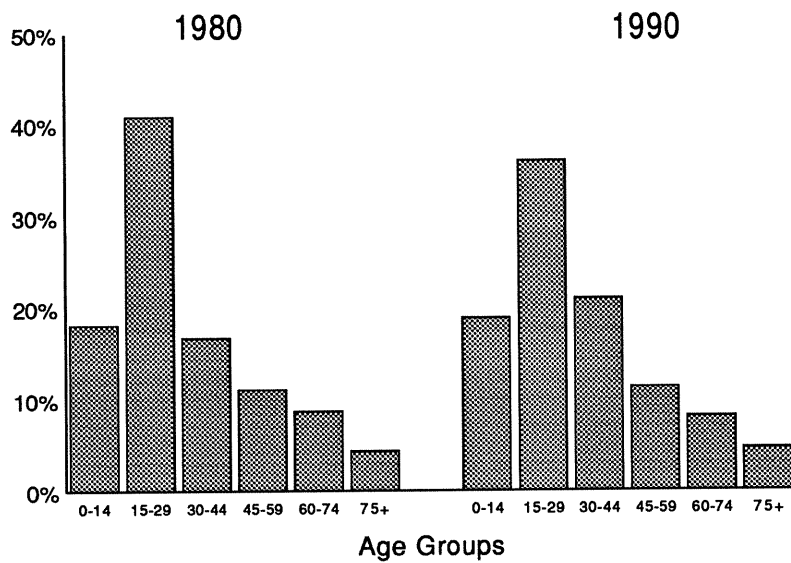
$$G^r = G^n + (\hat{G}^r - G^n) + D \\ D = G^r - \hat{G}^r \\ D = e^r \cdot (g^r - g^n).$$

Figure NE-A1
Age Structure of the Northern Tier



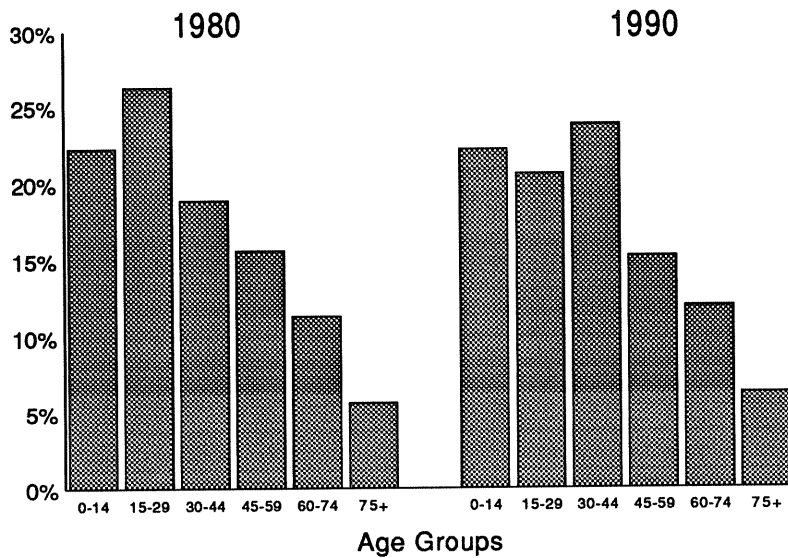
Source: Bureau of the Census, 1990 Census of Population and Housing

Figure NE-A2
Age Structure of the Lawrence Area



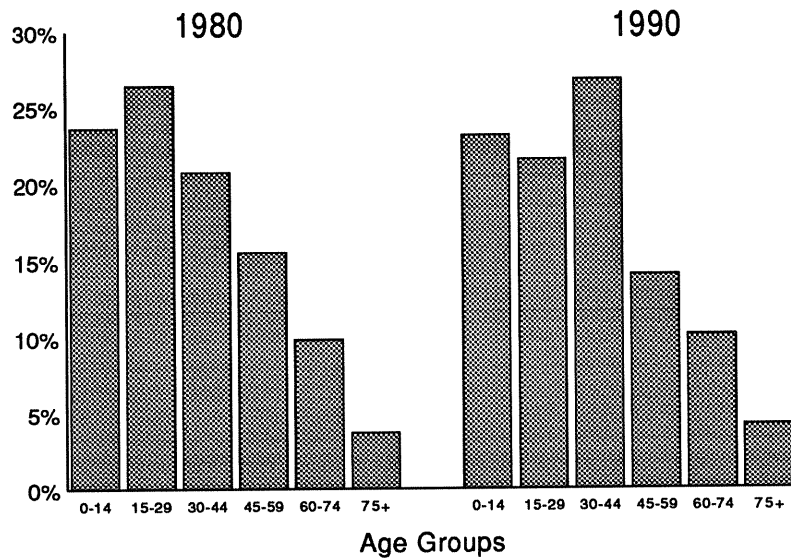
Source: Bureau of the Census, 1990 Census of Population and Housing

Figure NE-A3
Age Structure of the Topeka Area



Source: Bureau of the Census, 1990 Census of Population and Housing

Figure NE-A4
Age Structure of the WyJon Area



Source: Bureau of the Census, 1990 Census of Population and Housing

TABLE NE-A1

**AGE STRUCTURE OF U.S., KANSAS, NORTHEAST KANSAS, SUB-REGIONS
AND COUNTIES FOR 1980 AND 1990**

Percentage of Population in Each Age Category (categories are defined in terms of years)							
	0-14	15-29	30-44	45-59	60-74	75+	Total Population
United States							
1980	22.6%	27.4%	19.1%	15.2%	11.3%	4.4%	226,545,805
1990	21.5%	23.4%	23.9%	14.4%	11.5%	5.3%	248,709,873
Kansas							
1980	22.2%	27.7%	17.8%	14.8%	11.8%	5.6%	2,363,679
1990	22.8%	22.2%	23.4%	13.6%	11.7%	6.3%	2,477,574
Northeast Kansas							
1980	22.7%	27.8%	19.6%	15.0%	10.3%	4.5%	856,650
1990	22.5%	22.9%	25.2%	14.0%	10.5%	5.0%	958,970
Rest of Kansas							
1980	21.9%	27.6%	16.8%	14.7%	12.6%	6.3%	1,507,029
1990	22.9%	21.7%	22.2%	13.4%	12.5%	7.2%	1,518,604
Sub-Regions of Northeast Kansas							
Northern Tier							
1980	22.5%	24.8%	14.9%	14.4%	14.8%	8.6%	50,831
1990	23.1%	19.8%	19.4%	13.6%	14.6%	9.6%	46,640
Douglas-Franklin Area							
1980	18.1%	40.9%	16.7%	11.1%	8.7%	4.3%	89,702
1990	18.9%	36.1%	21.0%	11.3%	8.1%	4.6%	103,792
Topeka Area							
1980	22.3%	26.3%	18.9%	15.6%	11.3%	5.6%	197,086
1990	22.2%	20.6%	23.8%	15.2%	11.9%	6.3%	203,654
WyJon Area							
1980	23.6%	26.4%	20.8%	15.5%	9.8%	3.8%	519,031
1990	23.2%	21.6%	26.8%	14.1%	10.1%	4.2%	604,884

Counties of Northeast Kansas

	0-14	15-29	30-44	45-59	60-74	75+	Total Population
Atchison							
1980	22.5%	28.0%	15.4%	14.1%	12.7%	7.3%	18,397
1990	22.6%	22.3%	18.7%	15.0%	13.2%	8.3%	16,932
Brown							
1980	21.9%	21.1%	14.8%	14.4%	17.3%	10.5%	11,955
1990	23.3%	17.6%	19.4%	12.9%	15.7%	11.2%	11,128
Doniphan							
1980	22.8%	25.5%	15.4%	14.2%	14.8%	7.3%	9,268
1990	21.6%	21.0%	20.6%	13.5%	14.6%	8.7%	8,134
Douglas							
1980	16.9%	46.1%	16.7%	9.9%	7.0%	3.4%	67,640
1990	17.6%	40.2%	21.0%	10.5%	7.0%	3.7%	81,798
Franklin							
1980	21.9%	25.2%	16.9%	14.9%	13.9%	7.2%	22,062
1990	23.8%	20.8%	20.8%	14.3%	12.3%	7.9%	21,994
Jackson							
1980	24.5%	22.1%	18.3%	15.1%	12.5%	7.4%	11,644
1990	24.3%	17.7%	22.5%	14.6%	12.8%	8.1%	11,525
Jefferson							
1980	23.6%	22.1%	20.0%	15.4%	12.3%	6.7%	15,207
1990	23.2%	18.5%	22.3%	16.8%	12.4%	6.8%	15,905
Johnson							
1980	23.4%	25.6%	23.4%	16.0%	8.7%	2.8%	270,269
1990	22.8%	21.4%	28.3%	14.4%	9.5%	3.6%	355,054
Leavenworth							
1980	23.7%	26.4%	22.2%	13.9%	10.1%	3.7%	54,809
1990	22.6%	20.5%	31.2%	13.2%	8.9%	3.8%	64,371
Miami							
1980	22.8%	23.4%	18.3%	16.2%	12.8%	6.5%	21,618
1990	23.0%	19.8%	23.4%	15.5%	11.3%	6.9%	23,466
Nemaha							
1980	22.8%	23.1%	13.9%	15.3%	15.5%	9.5%	11,211
1990	24.7%	17.4%	19.5%	12.0%	15.8%	10.7%	10,446
Osage							
1980	22.7%	22.9%	17.7%	14.8%	14.4%	7.5%	15,319
1990	22.7%	18.0%	21.9%	15.0%	13.8%	8.6%	15,248
Shawnee							
1980	21.9%	27.4%	19.0%	15.7%	10.8%	5.2%	154,916
1990	21.9%	21.3%	24.2%	15.1%	11.7%	5.9%	160,976
Wyandotte							
1980	24.0%	28.1%	16.5%	15.3%	11.2%	4.9%	172,335
1990	24.3%	22.6%	22.4%	13.5%	11.8%	5.5%	161,993

Source: Bureau of the Census, 1990 Census of Population and Housing.

TABLE NE-A2

**THE STRUCTURE OF THE NORTHEAST REGIONAL ECONOMY
BASED ON PERSONAL INCOME (in thousands of 1990 dollars)**

	1970	% of Total Personal Income	1980	% of Total Personal Income	1990	% of Total Personal Income
NORTHERN TIER						
Total Personal Income	540,640		573,516		717,909	
By Place of Residence						
Nonfarm Income	451,455	83.5%	582,366	101.5%	672,794	93.7%
Farm Income	89,185	16.5%	(8,850)	-1.5%	45,115	6.3%
Dividends, Interest, Rent	81,128	15.0%	126,320	22.0%	167,471	23.3%
Transfer Payments	73,242	13.5%	110,095	19.2%	142,091	19.8%
By Place of Work						
Earned Income	376,908	69.7%	338,482	59.0%	417,736	58.2%
Wages & Salaries	220,119	40.7%	270,850	47.2%	286,532	39.9%
Other Labor Income	12,626	2.3%	28,136	4.9%	31,649	4.4%
Proprietors Income	144,163	26.7%	39,496	6.9%	99,555	13.9%
Private Sector	242,343	44.8%	295,479	51.5%	309,275	43.1%
Government Sector	45,379	8.4%	51,853	9.0%	63,346	8.8%
DOUGLAS-FRANKLIN AREA						
Total Personal Income	791,697		1,124,476		1,480,567	
By Place of Residence						
Nonfarm Income	770,849	97.4%	1,120,847	99.7%	1,472,674	99.5%
Farm Income	20,848	2.6%	3,629	0.3%	7,893	0.5%
Dividends, Interest, Rent	111,768	14.1%	174,588	15.5%	269,606	18.2%
Transfer Payments	81,509	10.3%	151,999	13.5%	198,988	13.4%
By Place of Work						
Earned Income	563,646	71.2%	751,913	66.9%	951,960	64.3%
Wages & Salaries	442,447	55.9%	606,166	53.9%	748,815	50.6%
Other Labor Income	20,848	2.6%	56,997	5.1%	70,499	4.8%
Proprietors Income	100,351	12.7%	88,750	7.9%	132,646	9.0%
Private Sector	393,391	49.7%	544,870	48.5%	691,139	46.7%
Government Sector	149,407	18.9%	203,413	18.1%	252,928	17.1%

	1970	% of Total Personal Income	1980	% of Total Personal Income	1990	% of Total Personal Income
TOPEKA AREA						
Total Personal Income	2,357,980		3,024,220		3,795,874	
By Place of Residence						
Nonfarm Income	2,326,399	98.7%	3,041,504	100.6%	3,769,148	99.3%
Farm Income	31,581	1.3%	(17,284)	-0.6%	26,726	0.7%
Dividends, Interest, Rent	304,284	12.9%	449,091	14.8%	680,178	17.9%
Transfer Payments	256,106	10.9%	464,241	15.4%	621,843	16.4%
By Place of Work						
Earned Income	1,933,018	82.0%	2,220,030	73.4%	2,702,325	71.2%
Wages & Salaries	1,621,203	68.8%	1,862,780	61.6%	2,203,780	58.1%
Other Labor Income	79,503	3.4%	170,884	5.7%	199,308	5.3%
Proprietors Income	232,312	9.9%	186,365	6.2%	299,237	7.9%
Private Sector	1,398,694	59.3%	1,769,779	58.5%	2,063,863	54.4%
Government Sector	502,743	21.3%	467,535	15.5%	611,736	16.1%
WYJON AREA						
Total Personal Income	6,573,494		8,927,587		12,930,383	
By Place of Residence						
Nonfarm Income	6,545,164	99.6%	8,922,818	99.9%	12,910,876	99.8%
Farm Income	28,331	0.4%	4,769	0.1%	19,507	0.2%
Dividends, Interest, Rent	825,471	12.6%	1,292,505	14.5%	2,406,825	18.6%
Transfer Payments	517,495	7.9%	950,605	10.6%	1,306,137	10.1%
By Place of Work						
Earned Income	4,114,078	62.6%	6,009,065	67.3%	8,817,356	68.2%
Wages & Salaries	3,444,730	52.4%	4,928,657	55.2%	7,262,895	56.2%
Other Labor Income	193,772	2.9%	483,817	5.4%	663,833	5.1%
Proprietors Income	475,576	7.2%	596,590	6.7%	890,628	6.9%
Private Sector	3,212,134	48.9%	5,029,723	56.3%	7,367,833	57.0%
Government Sector	873,613	13.3%	974,574	10.9%	1,430,016	11.1%

Source: Bureau of Economic Analysis, Table CA 5.

TABLE NE-A3

**THE STRUCTURE OF COUNTY ECONOMIES
BASED ON PERSONAL INCOME (in thousands of 1990 dollars)**

	1970	% of Total Personal Income	1980	% of Total Personal Income	1990	% of Total Personal Income
ATCHISON						
Total Personal Income	195,355		216,523		252,185	
By Place of Residence						
Nonfarm Income	182,622	83.5%	223,673	101.5%	244,377	93.7%
Farm Income	12,732	16.5%	(7,150)	-1.5%	7,808	6.3%
Dividends, Interest, Rent	25,878	15.0%	38,080	22.0%	52,523	23.3%
Transfer Payments	26,602	13.5%	39,863	19.2%	49,022	19.8%
By Place of Work						
Earned Income	145,427	74.4%	143,441	66.2%	150,183	59.6%
Wages & Salaries	111,717	40.7%	123,726	47.2%	115,081	39.9%
Other Labor Income	6,672	2.3%	14,350	4.9%	13,106	4.4%
Proprietors Income	27,038	26.7%	5,366	6.9%	21,996	13.9%
Private Sector	116,996	44.8%	131,620	51.5%	119,900	43.1%
Government Sector	15,698	8.4%	18,971	9.0%	22,475	8.8%
BROWN						
Total Personal Income	126,278		136,326		176,718	
By Place of Residence						
Nonfarm Income	103,385	97.4%	133,735	99.7%	158,171	99.5%
Farm Income	22,893	2.6%	2,591	0.3%	18,547	0.5%
Dividends, Interest, Rent	23,488	14.1%	34,953	15.5%	43,254	18.2%
Transfer Payments	19,436	10.3%	28,481	13.5%	41,129	13.4%
By Place of Work						
Earned Income	84,640	67.0%	78,541	57.6%	100,498	56.9%
Wages & Salaries	45,641	55.9%	59,903	53.9%	64,290	50.6%
Other Labor Income	2,694	2.6%	5,721	5.1%	6,506	4.8%
Proprietors Income	36,304	12.7%	12,917	7.9%	29,702	9.0%
Private Sector	50,746	49.7%	62,870	48.5%	65,982	46.7%
Government Sector	11,001	18.9%	13,079	18.1%	15,969	17.1%
DONIPHAN						
Total Personal Income	96,358		99,804		114,323	
By Place of Residence						
Nonfarm Income	73,390	98.7%	94,194	100.6%	104,505	99.3%
Farm Income	22,968	1.3%	5,610	-0.6%	9,818	0.7%
Dividends, Interest, Rent	11,912	12.9%	18,957	14.8%	21,604	17.9%
Transfer Payments	11,964	10.9%	18,190	15.4%	22,915	16.4%
By Place of Work						
Earned Income	60,128	62.4%	54,252	54.4%	65,381	57.2%
Wages & Salaries	30,408	68.8%	39,675	61.6%	44,133	58.1%
Other Labor Income	1,486	3.4%	3,479	5.7%	5,436	5.3%
Proprietors Income	28,234	9.9%	11,099	6.2%	15,812	7.9%
Private Sector	27,978	59.3%	39,606	58.5%	43,759	54.4%
Government Sector	9,182	21.3%	9,037	15.5%	11,804	16.1%

	1970	% of Total	1980	% of Total	1990	% of Total
NEMAHA						
Total Personal Income	122,650		120,864		174,683	
By Place of Residence						
Nonfarm Income	92,058	99.6%	130,764	99.9%	165,741	99.8%
Farm Income	30,592	0.4%	(9,901)	0.1%	8,942	0.2%
Dividends, Interest, Rent	19,850	12.6%	34,329	14.5%	50,090	18.6%
Transfer Payments	15,240	7.9%	23,560	10.6%	29,025	10.1%
By Place of Work						
Earned Income	86,714	70.7%	62,248	51.5%	101,674	58.2%
Wages & Salaries	32,353	52.4%	47,547	55.2%	63,028	56.2%
Other Labor Income	1,774	2.9%	4,586	5.4%	6,601	5.1%
Proprietors Income	52,587	7.2%	10,115	6.7%	32,045	6.9%
Private Sector	46,623	48.9%	61,383	56.3%	79,634	57.0%
Government Sector	9,498	13.3%	10,766	10.9%	13,098	11.1%
DOUGLAS						
Total Personal Income	581,545		831,889		1,162,723	
By Place of Residence						
Nonfarm Income	571,924	98.3%	831,589	100.1%	1,161,078	99.5%
Farm Income	9,621	1.7%	300	-0.1%	1,645	0.5%
Dividends, Interest, Rent	78,411	12.9%	125,801	15.0%	212,137	18.6%
Transfer Payments	51,954	9.0%	103,323	12.3%	140,815	12.0%
By Place of Work						
Earned Income	444,192	76.4%	597,612	71.8%	795,369	68.4%
Wages & Salaries	362,004	55.8%	491,900	56.2%	635,887	55.5%
Other Labor Income	16,781	3.0%	45,491	5.4%	59,659	5.1%
Proprietors Income	65,407	9.3%	60,221	6.7%	99,823	7.5%
Private Sector	304,568	51.1%	416,740	56.0%	570,432	55.1%
Government Sector	130,003	15.3%	180,572	12.4%	223,292	12.5%
FRANKLIN						
Total Personal Income	210,152		292,587		317,844	
By Place of Residence						
Nonfarm Income	198,925	89.6%	289,257	97.6%	311,596	94.0%
Farm Income	11,227	10.4%	3,329	2.4%	6,248	6.0%
Dividends, Interest, Rent	33,358	13.0%	48,787	16.7%	57,469	19.1%
Transfer Payments	29,555	11.3%	48,676	13.8%	58,173	16.0%
By Place of Work						
Earned Income	119,454	56.8%	154,300	52.7%	156,591	49.3%
Wages & Salaries	80,443	54.6%	114,265	56.6%	112,928	49.9%
Other Labor Income	4,068	3.2%	11,506	5.9%	10,840	5.2%
Proprietors Income	34,944	20.9%	28,529	11.0%	32,823	14.4%
Private Sector	88,824	54.6%	128,130	60.2%	120,707	52.0%
Government Sector	19,404	13.7%	22,841	10.9%	29,636	11.4%

	1970	% of Total	1980	% of Total	1990	% of Total
JACKSON						
Total Personal Income	101,223		138,984		172,490	
By Place of Residence						
Nonfarm Income	97,411	92.9%	143,684	98.6%	167,142	96.3%
Farm Income	3,812	7.1%	(4,699)	1.4%	5,348	3.7%
Dividends, Interest, Rent	14,180	13.0%	24,685	16.0%	33,491	18.9%
Transfer Payments	14,251	10.4%	25,293	13.2%	30,119	14.3%
By Place of Work						
Earned Income	43,796	43.3%	48,701	35.0%	57,954	33.6%
Wages & Salaries	27,888	55.1%	39,303	56.5%	37,546	52.3%
Other Labor Income	1,318	3.1%	3,616	5.7%	3,605	5.1%
Proprietors Income	14,590	16.6%	5,783	9.3%	16,803	11.5%
Private Sector	30,195	53.3%	42,712	58.6%	36,708	53.3%
Government Sector	9,789	14.3%	10,689	11.5%	15,898	11.9%
JEFFERSON						
Total Personal Income	139,311		195,689		247,751	
By Place of Residence						
Nonfarm Income	120,834	97.8%	199,283	98.7%	242,607	98.7%
Farm Income	18,477	2.2%	(3,595)	1.3%	5,144	1.3%
Dividends, Interest, Rent	17,223	13.3%	31,758	14.7%	39,787	17.4%
Transfer Payments	15,430	10.4%	29,227	14.5%	39,278	15.0%
By Place of Work						
Earned Income	66,835	48.0%	59,850	30.6%	71,757	29.0%
Wages & Salaries	33,128	66.1%	44,952	60.6%	47,382	58.3%
Other Labor Income	1,415	3.9%	3,778	6.1%	4,447	5.5%
Proprietors Income	32,292	9.7%	11,120	8.0%	19,928	8.6%
Private Sector	36,359	63.8%	49,068	61.7%	42,707	59.7%
Government Sector	11,999	13.6%	14,377	11.8%	23,906	11.5%
OSAGE						
Total Personal Income	129,473		182,133		223,230	
By Place of Residence						
Nonfarm Income	125,638	83.5%	195,502	101.5%	220,591	93.7%
Farm Income	3,835	16.5%	(13,369)	-1.5%	2,639	6.3%
Dividends, Interest, Rent	18,745	15.0%	33,058	22.0%	37,235	23.3%
Transfer Payments	18,477	13.5%	32,629	19.2%	42,940	19.8%
By Place of Work						
Earned Income	56,509	43.6%	48,947	26.9%	72,102	32.3%
Wages & Salaries	36,889	40.7%	45,942	47.2%	49,507	39.9%
Other Labor Income	1,677	2.3%	3,961	4.9%	4,661	4.4%
Proprietors Income	17,944	26.7%	(956)	6.9%	17,934	13.9%
Private Sector	40,452	44.8%	48,080	51.5%	50,590	43.1%
Government Sector	12,222	8.4%	14,235	9.0%	18,873	8.8%

	1970	% of Total	1980	% of Total	1990	% of Total
SHAWNEE						
Total Personal Income	1,987,973		2,507,414		3,152,403	
By Place of Residence						
Nonfarm Income	1,982,516	97.4%	2,503,035	99.7%	3,138,808	99.5%
Farm Income	5,457	2.6%	4,378	0.3%	13,595	0.5%
Dividends, Interest, Rent	254,136	14.1%	359,590	15.5%	569,665	18.2%
Transfer Payments	207,948	10.3%	377,091	13.5%	509,506	13.4%
By Place of Work						
Earned Income	1,765,877	88.8%	2,062,531	82.3%	2,500,512	79.3%
Wages & Salaries	1,523,298	55.9%	1,732,584	53.9%	2,069,345	50.6%
Other Labor Income	75,093	2.6%	159,529	5.1%	186,595	4.8%
Proprietors Income	167,486	12.7%	170,418	7.9%	244,572	9.0%
Private Sector	1,291,687	49.7%	1,629,919	48.5%	1,933,858	46.7%
Government Sector	468,733	18.9%	428,234	18.1%	553,059	17.1%
JOHNSON						
Total Personal Income	3,719,052		5,691,054		9,355,401	
By Place of Residence						
Nonfarm Income	3,708,920	98.7%	5,686,564	100.6%	9,350,274	99.3%
Farm Income	10,132	1.3%	4,490	-0.6%	5,127	0.7%
Dividends, Interest, Rent	589,418	12.9%	955,962	14.8%	1,949,080	17.9%
Transfer Payments	179,175	10.9%	392,106	15.4%	641,969	16.4%
By Place of Work						
Earned Income	1,592,701	42.8%	3,114,899	54.7%	5,701,387	60.9%
Wages & Salaries	1,234,306	68.8%	2,456,078	61.6%	4,613,913	58.1%
Other Labor Income	63,572	3.4%	228,102	5.7%	414,113	5.3%
Proprietors Income	294,824	9.9%	430,720	6.2%	673,361	7.9%
Private Sector	1,282,977	59.3%	2,798,647	58.5%	5,157,829	54.4%
Government Sector	299,592	21.3%	311,763	15.5%	538,431	16.1%
LEAVENWORTH						
Total Personal Income	550,908		715,546		929,390	
By Place of Residence						
Nonfarm Income	541,587	99.6%	712,541	99.9%	919,267	99.8%
Farm Income	9,321	0.4%	3,005	0.1%	10,123	0.2%
Dividends, Interest, Rent	47,828	12.6%	80,342	14.5%	126,239	18.6%
Transfer Payments	67,972	7.9%	118,036	10.6%	147,386	10.1%
By Place of Work						
Earned Income	419,777	76.2%	470,586	65.8%	621,352	66.9%
Wages & Salaries	365,374	52.4%	406,874	55.2%	526,835	56.2%
Other Labor Income	10,338	2.9%	22,564	5.4%	34,698	5.1%
Proprietors Income	44,064	7.2%	41,147	6.7%	59,819	6.9%
Private Sector	168,145	48.9%	199,344	56.3%	229,797	57.0%
Government Sector	242,311	13.3%	268,237	10.9%	381,432	11.1%

	1970	% of Total	1980	% of Total	1990	% of Total
MIAMI						
Total Personal Income	202,711		291,695		360,700	
By Place of Residence						
Nonfarm Income	198,104	98.3%	295,684	100.1%	355,558	99.5%
Farm Income	4,607	1.7%	(3,989)	-0.1%	5,142	0.5%
Dividends, Interest, Rent	25,190	12.9%	49,256	15.0%	60,203	18.6%
Transfer Payments	27,613	9.0%	44,383	12.3%	59,751	12.0%
By Place of Work						
Earned Income	116,033	57.2%	145,544	49.9%	152,073	42.2%
Wages & Salaries	84,071	55.8%	117,607	56.2%	110,740	55.5%
Other Labor Income	4,119	3.0%	10,642	5.4%	10,190	5.1%
Proprietors Income	27,843	9.3%	17,295	6.7%	31,143	7.5%
Private Sector	80,424	51.1%	118,197	56.0%	103,535	55.1%
Government Sector	31,002	15.3%	31,336	12.4%	43,396	12.5%
WYANDOTTE						
Total Personal Income	2,100,824		2,229,293		2,284,892	
By Place of Residence						
Nonfarm Income	2,096,553	89.6%	2,228,030	97.6%	2,285,777	94.0%
Farm Income	4,271	10.4%	1,263	2.4%	(885)	6.0%
Dividends, Interest, Rent	163,034	13.0%	206,946	16.7%	271,303	19.1%
Transfer Payments	242,734	11.3%	396,080	13.8%	457,031	16.0%
By Place of Work						
Earned Income	1,985,566	94.5%	2,278,036	102.2%	2,342,544	102.5%
Wages & Salaries	1,760,979	54.6%	1,948,099	56.6%	2,011,407	49.9%
Other Labor Income	115,742	3.2%	222,509	5.9%	204,832	5.2%
Proprietors Income	108,845	20.9%	107,429	11.0%	126,305	14.4%
Private Sector	1,680,588	54.6%	1,913,535	60.2%	1,876,672	52.0%
Government Sector	300,707	13.7%	363,239	10.9%	466,757	11.4%

Source: Bureau of Economic Analysis, Table CA 5.

TABLE NE-A4

**REAL GROWTH RATES OF PERSONAL INCOME AND ITS COMPONENTS
FOR THE U.S., KANSAS, NORTHEAST KANSAS AND ITS SUB-REGIONS**

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
UNITED STATES							
Total Personal Income	12.7%	15.7%	4.1%	2.9%	3.8%	2.9%	1.1%
Per Capita Personal Income	7.6%	10.4%	3.2%	2.0%	2.9%	1.9%	0.0%
Nonfarm Income	12.8%	15.6%	4.1%	2.9%	3.9%	2.7%	1.2%
Farm Income	2.8%	26.5%	11.7%	4.2%	-2.1%	16.6%	-4.8%
Dividends, Interest, Rent	30.8%	18.0%	2.5%	-0.9%	5.5%	9.6%	0.5%
Transfer Payments	15.1%	17.3%	4.5%	1.7%	2.6%	3.4%	4.0%
Wages & Salaries	10.3%	13.8%	4.1%	3.6%	3.8%	1.0%	0.6%
Other Labor Income	3.8%	13.3%	4.3%	1.4%	3.4%	2.3%	1.2%
Proprietors Income	8.5%	29.6%	8.5%	8.9%	5.3%	3.8%	0.3%
Private Sector	9.4%	15.4%	4.6%	4.2%	4.3%	1.0%	0.5%
Government Sector	11.0%	14.6%	3.8%	3.1%	2.9%	2.1%	1.9%
KANSAS							
Total Personal Income	11.4%	13.5%	4.3%	0.0%	2.4%	2.8%	3.3%
Per Capita Personal Income	8.8%	11.1%	4.1%	-0.5%	1.7%	2.4%	3.0%
Nonfarm Income	8.7%	13.6%	3.5%	0.4%	2.6%	3.8%	2.6%
Farm Income	193.3%	9.9%	25.4%	-8.2%	-3.0%	-21.3%	25.1%
Dividends, Interest, Rent	30.3%	14.7%	0.9%	-3.4%	4.2%	11.5%	1.2%
Transfer Payments	15.0%	19.4%	5.2%	0.5%	3.0%	5.0%	4.5%
Wages & Salaries	5.4%	11.1%	3.9%	0.9%	2.1%	1.3%	2.5%
Other Labor Income	-0.8%	14.0%	5.3%	-0.5%	3.1%	2.1%	3.4%
Proprietors Income	30.7%	19.0%	12.6%	-0.9%	2.9%	-5.5%	9.7%
Private Sector	2.5%	12.3%	3.9%	1.2%	2.6%	1.2%	2.8%
Government Sector	13.9%	14.5%	5.4%	0.4%	2.7%	2.9%	2.4%
NORTHEAST KANSAS							
Total Personal Income	14.7%	20.9%	5.8%	2.7%	3.7%	4.0%	3.2%
Nonfarm Income	13.4%	21.4%	5.7%	3.0%	3.8%	4.0%	3.3%
Farm Income	-959.8%	-34.9%	17.7%	-29.7%	-19.0%	4.6%	-7.1%
Dividends, Interest, Rent	33.2%	29.5%	3.9%	0.2%	7.8%	10.8%	4.2%
Transfer Payments	13.5%	19.2%	5.3%	1.7%	1.7%	4.8%	4.5%
Wages & Salaries	14.7%	19.4%	7.0%	2.5%	3.8%	2.0%	2.7%
Other Labor Income	8.9%	19.8%	7.8%	0.7%	4.6%	2.5%	2.9%
Proprietors Income	25.1%	24.7%	9.2%	3.7%	3.9%	2.6%	3.3%
Private Sector	12.9%	20.9%	7.2%	3.5%	4.1%	1.8%	2.8%
Government Sector	15.4%	20.3%	6.9%	0.9%	4.0%	3.8%	3.4%

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
REST OF KANSAS							
Total Personal Income	9.3%	8.7%	3.3%	-1.7%	1.5%	2.0%	3.4%
Nonfarm Income	5.7%	8.3%	1.9%	-1.4%	1.7%	3.7%	2.2%
Farm Income	154.8%	15.0%	26.3%	-6.0%	-1.7%	-23.0%	27.9%
Dividends, Interest, Rent	28.6%	6.1%	-0.8%	-5.6%	1.9%	12.0%	-0.8%
Transfer Payments	15.8%	19.5%	5.1%	-0.1%	3.7%	5.1%	4.4%
Wages & Salaries	-0.4%	5.1%	1.6%	-0.4%	0.7%	0.7%	2.3%
Other Labor Income	-6.3%	10.1%	3.6%	-1.4%	2.0%	1.7%	3.8%
Proprietors Income	32.8%	17.0%	13.8%	-2.5%	2.5%	-8.4%	12.3%
Private Sector	-3.6%	6.4%	1.7%	-0.4%	1.4%	0.8%	2.8%
Government Sector	12.8%	10.3%	4.3%	0.1%	1.7%	2.1%	1.7%
NORTHERN TIER							
Total Personal Income	16.0%	7.9%	4.6%	-3.6%	0.9%	2.5%	3.5%
Nonfarm Income	3.4%	11.7%	3.1%	0.3%	2.5%	3.2%	2.0%
Farm Income	-812.0%	-28.4%	18.2%	-36.0%	-19.8%	-10.6%	31.9%
Dividends, Interest, Rent	28.5%	3.2%	-0.7%	-4.7%	1.2%	8.4%	-0.6%
Transfer Payments	11.5%	15.7%	7.4%	-1.4%	0.6%	4.2%	4.3%
Wages & Salaries	-6.9%	13.6%	2.1%	3.9%	2.8%	2.0%	2.2%
Other Labor Income	-11.8%	27.5%	3.8%	4.7%	5.8%	6.5%	4.2%
Proprietors Income	168.3%	-6.1%	13.5%	-22.0%	-4.4%	-3.3%	14.8%
Private Sector	-11.4%	18.1%	2.2%	4.4%	4.9%	2.6%	2.8%
Government Sector	12.2%	8.9%	5.3%	-0.3%	0.8%	1.4%	1.5%
DOUGLAS-FRANKLIN AREA							
Total Personal Income	11.1%	18.5%	5.4%	1.3%	3.5%	5.6%	1.7%
Nonfarm Income	10.4%	19.0%	5.0%	1.8%	3.4%	5.4%	2.1%
Farm Income	224.5%	-33.0%	44.3%	-40.4%	14.0%	26.2%	-45.8%
Dividends, Interest, Rent	32.1%	16.9%	3.7%	-1.1%	2.3%	12.7%	-1.1%
Transfer Payments	17.3%	11.6%	-5.0%	2.3%	4.1%	6.3%	3.8%
Wages & Salaries	0.5%	22.9%	7.8%	0.9%	5.3%	4.0%	3.2%
Other Labor Income	-2.8%	27.3%	8.0%	1.3%	8.4%	4.0%	3.2%
Proprietors Income	21.1%	23.4%	14.5%	0.8%	4.0%	4.8%	-1.9%
Private Sector	-0.7%	27.7%	8.6%	4.3%	5.3%	3.7%	3.3%
Government Sector	7.8%	15.3%	7.2%	-4.8%	5.0%	4.3%	3.1%

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
TOPEKA AREA							
Total Personal Income	10.7%	13.4%	4.1%	1.0%	2.2%	3.6%	2.0%
Nonfarm Income	8.7%	14.0%	4.0%	1.3%	2.4%	3.7%	1.9%
Farm Income	-338.3%	-35.1%	10.0%	-25.6%	-20.2%	-8.2%	8.3%
Dividends, Interest, Rent	30.0%	16.5%	4.1%	-2.0%	3.9%	10.6%	-0.7%
Transfer Payments	9.8%	22.0%	4.7%	1.1%	2.7%	6.7%	5.2%
Wages & Salaries	6.3%	11.3%	4.1%	1.5%	2.1%	1.5%	1.6%
Other Labor Income	4.1%	12.1%	4.1%	1.0%	2.7%	2.3%	1.4%
Proprietors Income	35.6%	18.4%	6.8%	0.5%	4.1%	1.6%	4.3%
Private Sector	4.4%	11.7%	3.8%	2.5%	2.6%	1.0%	1.3%
Government Sector	11.6%	17.2%	6.1%	-0.4%	3.0%	4.0%	3.6%
WYJON AREA							
Total Personal Income	16.4%	24.4%	6.5%	3.8%	4.3%	4.0%	3.8%
Nonfarm Income	16.1%	24.6%	6.4%	3.8%	4.4%	4.0%	3.9%
Farm Income	665.6%	-46.6%	16.8%	-18.8%	-26.4%	31.1%	-41.6%
Dividends, Interest, Rent	35.0%	37.9%	4.3%	1.5%	10.3%	10.8%	6.7%
Transfer Payments	14.9%	19.5%	7.0%	2.3%	1.0%	3.7%	4.3%
Wages & Salaries	20.8%	22.0%	8.2%	3.0%	4.2%	2.0%	3.0%
Other Labor Income	13.1%	21.3%	9.2%	0.4%	4.7%	2.3%	3.2%
Proprietors Income	13.0%	32.1%	8.5%	9.7%	4.8%	3.2%	2.6%
Private Sector	18.8%	23.3%	8.4%	3.7%	4.4%	1.8%	3.2%
Government Sector	19.0%	23.3%	7.3%	2.7%	4.4%	3.7%	3.4%

Source: Bureau of Economic Analysis, Table CA 5.

TABLE NE-A5

**REAL GROWTH RATES OF PERSONAL INCOME AND ITS COMPONENTS
FOR NORTHEAST KANSAS COUNTIES**

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
ATCHISON							
Total Personal Income	7.0%	8.9%	1.9%	0.0%	3.4%	1.4%	1.9%
Per Capita Personal Income	12.0%	13.3%	3.1%	0.4%	4.2%	2.2%	2.8%
Nonfarm Income	-1.1%	10.5%	1.6%	1.4%	3.8%	1.6%	1.8%
Farm Income	-246.1%	-25.2%	8.1%	-27.8%	-6.2%	-2.8%	5.0%
Dividends, Interest, Rent	21.6%	13.5%	-1.3%	-1.4%	9.6%	6.7%	-0.4%
Transfer Payments	9.2%	12.6%	4.6%	-1.8%	1.3%	4.3%	3.7%
Wages & Salaries	-14.0%	8.2%	0.6%	4.0%	2.9%	-1.5%	2.0%
Other Labor Income	-25.8%	23.0%	2.8%	7.3%	8.8%	-0.6%	3.1%
Proprietors Income	310.7%	-0.2%	5.2%	-12.1%	2.2%	0.1%	5.6%
Private Sector	-18.5%	11.8%	0.3%	5.3%	4.8%	-1.3%	2.4%
Government Sector	12.9%	5.0%	4.5%	-1.2%	-0.7%	0.0%	2.5%
BROWN							
Total Personal Income	19.8%	8.2%	6.4%	-5.4%	-1.6%	4.4%	4.8%
Per Capita Personal Income	26.5%	10.1%	7.3%	-5.0%	-2.1%	4.7%	5.3%
Nonfarm Income	3.8%	13.9%	4.9%	-0.5%	1.3%	4.8%	2.8%
Farm Income	844.0%	-24.2%	14.7%	-30.6%	-23.4%	-0.4%	24.8%
Dividends, Interest, Rent	21.9%	1.6%	-0.9%	-5.1%	-0.1%	8.7%	-0.5%
Transfer Payments	13.8%	26.9%	14.4%	-1.6%	1.2%	5.4%	5.8%
Wages & Salaries	-9.9%	19.1%	1.9%	3.2%	2.9%	4.5%	5.3%
Other Labor Income	-8.9%	24.9%	3.6%	3.0%	2.4%	6.5%	7.3%
Proprietors Income	161.4%	-12.0%	12.2%	-22.8%	-13.0%	0.7%	15.9%
Private Sector	-13.6%	21.4%	1.7%	3.8%	3.8%	4.7%	5.9%
Government Sector	8.4%	12.6%	5.7%	-1.8%	2.4%	3.2%	2.7%
DONIPHAN							
Total Personal Income	16.5%	-1.7%	3.5%	-9.7%	-0.2%	3.1%	2.1%
Per Capita Personal Income	25.0%	5.2%	4.7%	-8.1%	0.5%	4.8%	3.9%
Nonfarm Income	3.8%	6.8%	1.7%	-1.3%	1.3%	3.6%	1.4%
Farm Income	229.9%	-47.0%	13.2%	-49.4%	-13.6%	-2.4%	9.9%
Dividends, Interest, Rent	34.3%	-15.2%	-4.1%	-10.1%	-6.2%	6.0%	-0.9%
Transfer Payments	12.3%	12.1%	9.9%	-1.7%	-2.0%	2.7%	3.1%
Wages & Salaries	4.0%	7.0%	-1.7%	1.2%	-0.9%	10.5%	-1.8%
Other Labor Income	13.0%	38.3%	-2.5%	-1.0%	-0.6%	38.3%	4.2%
Proprietors Income	113.3%	-33.2%	11.0%	-40.9%	-3.4%	-1.2%	6.6%
Private Sector	0.7%	9.7%	-3.3%	-0.6%	0.7%	14.2%	-0.7%
Government Sector	15.7%	12.9%	6.5%	2.8%	2.0%	2.4%	-1.4%

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
NEMAHA							
Total Personal Income	27.5%	13.4%	7.5%	-2.3%	0.7%	1.7%	5.5%
Per Capita Personal Income	31.7%	18.0%	8.2%	-1.2%	1.3%	2.4%	6.4%
Nonfarm Income	10.5%	14.7%	4.8%	0.7%	2.6%	4.0%	1.9%
Farm Income	-197.0%	-6.9%	47.9%	-33.4%	-31.0%	-54.4%	200.8%
Dividends, Interest, Rent	39.6%	4.5%	1.9%	-4.6%	-2.4%	11.1%	-0.9%
Transfer Payments	12.0%	10.0%	1.5%	-0.2%	0.8%	3.5%	4.1%
Wages & Salaries	6.3%	24.7%	8.3%	6.4%	4.9%	0.6%	2.5%
Other Labor Income	9.7%	31.2%	10.8%	5.1%	7.0%	2.0%	3.2%
Proprietors Income	162.1%	20.9%	24.3%	-13.0%	-0.9%	-10.6%	26.0%
Private Sector	-1.7%	32.0%	9.9%	6.4%	8.4%	1.2%	2.9%
Government Sector	12.7%	7.9%	5.1%	0.4%	0.2%	0.6%	1.3%

DOUGLAS							
Total Personal Income	13.2%	23.5%	5.9%	2.6%	4.2%	6.5%	2.4%
Per Capita Personal Income	5.8%	9.1%	2.5%	0.3%	1.5%	4.2%	0.3%
Nonfarm Income	12.9%	23.7%	5.9%	2.7%	4.1%	6.6%	2.5%
Farm Income	815.5%	-40.1%	16.8%	-23.1%	45.7%	-26.8%	-37.4%
Dividends, Interest, Rent	36.4%	23.6%	5.0%	1.0%	2.1%	15.5%	-1.2%
Transfer Payments	18.8%	14.7%	-4.9%	3.2%	5.2%	7.1%	3.7%
Wages & Salaries	2.8%	25.7%	8.2%	1.1%	5.6%	5.0%	3.6%
Other Labor Income	1.3%	29.5%	8.0%	1.7%	8.5%	5.0%	3.4%
Proprietors Income	21.8%	36.1%	12.4%	10.2%	5.8%	1.6%	2.3%
Private Sector	3.0%	32.9%	9.3%	5.8%	5.8%	4.7%	3.7%
Government Sector	7.0%	15.6%	7.2%	-5.5%	5.4%	4.9%	3.2%

FRANKLIN							
Total Personal Income	5.1%	3.3%	3.8%	-2.9%	1.1%	2.4%	-1.0%
Per Capita Personal Income	6.4%	2.4%	4.3%	-3.2%	0.7%	2.0%	-1.2%
Nonfarm Income	3.2%	4.4%	2.3%	-1.0%	1.0%	1.1%	0.8%
Farm Income	171.3%	-30.8%	52.6%	-44.4%	3.8%	50.1%	-47.7%
Dividends, Interest, Rent	20.8%	-2.5%	-0.2%	-7.5%	2.7%	3.7%	-0.9%
Transfer Payments	14.3%	4.6%	-5.3%	0.2%	1.5%	4.5%	3.9%
Wages & Salaries	-9.3%	9.0%	5.9%	-0.4%	3.4%	-1.2%	1.2%
Other Labor Income	-19.1%	16.4%	7.8%	-0.6%	7.4%	-0.9%	2.1%
Proprietors Income	19.7%	-3.9%	19.2%	-18.2%	-0.7%	14.0%	-13.0%
Private Sector	-12.7%	7.9%	6.2%	-1.6%	2.8%	-0.9%	1.3%
Government Sector	14.5%	13.4%	6.6%	0.7%	2.2%	0.7%	2.7%

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
JACKSON							
Total Personal Income	13.4%	9.4%	3.2%	-1.5%	5.0%	0.5%	2.0%
Per Capita Personal Income	14.3%	9.9%	3.3%	-1.1%	4.6%	0.7%	2.3%
Nonfarm Income	7.0%	8.7%	1.6%	0.3%	4.5%	1.1%	1.0%
Farm Income	-182.1%	38.6%	67.2%	-46.0%	27.0%	-19.6%	50.5%
Dividends, Interest, Rent	21.9%	11.3%	-0.2%	-5.8%	15.6%	3.4%	-0.9%
Transfer Payments	14.6%	3.9%	-3.4%	-1.8%	2.8%	5.7%	0.8%
Wages & Salaries	-6.3%	1.9%	-4.0%	-0.1%	3.4%	0.6%	2.1%
Other Labor Income	-9.4%	10.0%	-2.3%	-1.7%	8.3%	1.1%	4.7%
Proprietors Income	155.1%	13.9%	17.3%	-22.4%	15.6%	-4.9%	13.8%
Private Sector	-12.3%	-2.0%	-6.7%	-3.4%	6.9%	-0.1%	1.8%
Government Sector	27.0%	17.2%	6.8%	1.5%	1.8%	2.7%	3.3%

JEFFERSON							
Total Personal Income	12.1%	12.9%	4.8%	0.6%	1.1%	3.2%	2.7%
Per Capita Personal Income	13.1%	7.1%	4.3%	-0.8%	-0.5%	2.2%	1.8%
Nonfarm Income	7.7%	13.0%	4.0%	1.4%	1.4%	3.6%	2.1%
Farm Income	-233.2%	7.4%	39.5%	-24.7%	-13.0%	-16.9%	41.4%
Dividends, Interest, Rent	21.6%	3.0%	2.8%	-2.6%	-4.3%	8.5%	-0.9%
Transfer Payments	17.8%	14.1%	0.9%	0.1%	3.3%	4.5%	4.6%
Wages & Salaries	-5.7%	11.8%	8.2%	-3.0%	2.4%	1.1%	3.0%
Other Labor Income	-4.0%	22.6%	9.4%	-4.1%	6.2%	3.0%	6.9%
Proprietors Income	66.0%	8.0%	14.1%	-9.6%	-1.5%	-2.9%	9.6%
Private Sector	-14.7%	2.0%	5.7%	-5.7%	1.5%	-1.2%	2.0%
Government Sector	23.8%	34.3%	11.9%	2.9%	5.1%	6.1%	4.7%

OSAGE							
Total Personal Income	16.0%	5.6%	5.2%	-0.6%	-1.3%	0.6%	1.8%
Per Capita Personal Income	18.7%	4.0%	4.8%	-1.7%	-0.9%	0.3%	1.6%
Nonfarm Income	3.4%	9.1%	5.8%	0.3%	-0.4%	1.5%	1.8%
Farm Income	-168.8%	-71.3%	-8.4%	-21.9%	-31.6%	-41.5%	0.2%
Dividends, Interest, Rent	23.3%	-8.7%	2.9%	-4.5%	-9.5%	3.5%	-0.8%
Transfer Payments	12.3%	17.2%	9.9%	0.1%	-1.8%	3.8%	4.5%
Wages & Salaries	-2.9%	11.0%	7.2%	0.5%	0.2%	1.1%	1.7%
Other Labor Income	-1.7%	19.7%	8.7%	1.4%	1.5%	2.4%	4.4%
Proprietors Income	-2506.3%	-22.0%	-3.2%	-7.8%	-4.3%	-9.4%	0.7%
Private Sector	-4.1%	9.7%	5.4%	0.6%	2.6%	0.3%	0.7%
Government Sector	13.8%	16.5%	6.9%	0.8%	0.5%	3.0%	4.4%

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
SHAWNEE							
Total Personal Income	10.0%	14.3%	4.0%	1.3%	2.4%	4.0%	1.9%
Per Capita Personal Income	9.1%	10.9%	3.8%	0.5%	1.2%	3.5%	1.5%
Nonfarm Income	9.3%	14.8%	4.0%	1.5%	2.5%	4.0%	2.0%
Farm Income	433.2%	-41.8%	1.6%	-21.7%	-26.9%	9.3%	-8.4%
Dividends, Interest, Rent	31.9%	20.1%	4.6%	-1.5%	5.0%	11.7%	-0.6%
Transfer Payments	8.6%	24.4%	5.2%	1.4%	3.1%	7.2%	5.6%
Wages & Salaries	7.2%	11.4%	4.1%	1.6%	2.1%	1.5%	1.6%
Other Labor Income	4.7%	11.7%	4.0%	1.2%	2.6%	2.3%	1.1%
Proprietors Income	15.3%	24.5%	6.5%	4.2%	4.6%	3.4%	3.6%
Private Sector	5.7%	12.2%	3.9%	2.8%	2.5%	1.1%	1.3%
Government Sector	10.7%	16.6%	5.9%	-0.7%	3.0%	4.0%	3.5%

JOHNSON							
Total Personal Income	22.8%	33.9%	8.0%	5.9%	6.4%	4.8%	4.8%
Per Capita Personal Income	10.4%	13.0%	4.5%	1.7%	2.4%	1.8%	2.0%
Nonfarm Income	22.7%	34.0%	8.0%	6.0%	6.5%	4.8%	4.9%
Farm Income	141.3%	-52.7%	9.9%	-32.5%	-36.1%	78.9%	-44.2%
Dividends, Interest, Rent	36.7%	49.2%	5.2%	3.8%	13.3%	11.1%	8.6%
Transfer Payments	29.0%	27.0%	7.3%	3.6%	5.3%	3.3%	4.9%
Wages & Salaries	35.8%	38.3%	11.5%	7.3%	6.2%	4.3%	4.3%
Other Labor Income	29.1%	40.6%	13.7%	5.4%	6.7%	5.0%	4.8%
Proprietors Income	10.8%	41.0%	10.5%	12.2%	5.9%	3.0%	4.2%
Private Sector	32.6%	39.0%	11.8%	8.0%	6.2%	3.9%	4.4%
Government Sector	24.1%	39.2%	9.5%	6.0%	7.3%	6.4%	5.0%

LEAVENWORTH							
Total Personal Income	12.9%	15.0%	4.4%	2.3%	0.7%	5.4%	1.5%
Per Capita Personal Income	8.8%	1.1%	-0.7%	0.1%	-1.2%	3.4%	-0.4%
Nonfarm Income	11.8%	15.4%	3.9%	2.2%	1.5%	4.6%	2.4%
Farm Income	285.3%	-12.6%	36.0%	5.6%	-37.9%	72.6%	-43.2%
Dividends, Interest, Rent	36.4%	15.2%	3.5%	-2.6%	-0.2%	16.1%	-1.4%
Transfer Payments	9.0%	14.5%	3.0%	0.7%	2.3%	3.6%	4.3%
Wages & Salaries	16.1%	11.5%	5.0%	-1.1%	4.9%	-0.1%	2.5%
Other Labor Income	13.7%	35.2%	4.8%	2.7%	11.6%	10.4%	1.9%
Proprietors Income	33.9%	8.6%	6.4%	11.4%	-11.7%	14.6%	-9.5%
Private Sector	3.0%	11.9%	6.2%	-0.8%	0.7%	2.0%	3.3%
Government Sector	25.3%	13.5%	3.4%	0.8%	6.9%	-0.2%	2.0%

	1980 to 1985	1985 to 1990	1985 to 1986	1986 to 1987	1987 to 1988	1988 to 1989	1989 to 1990
MIAMI							
Total Personal Income	12.3%	10.1%	4.9%	-0.1%	0.4%	3.3%	1.4%
Per Capita Personal Income	10.5%	3.1%	4.8%	-1.9%	-1.8%	1.9%	0.2%
Nonfarm Income	7.8%	11.6%	4.2%	1.7%	0.0%	3.4%	1.8%
Farm Income	-322.8%	-42.2%	30.4%	-50.1%	22.3%	-5.9%	-22.8%
Dividends, Interest, Rent	22.1%	0.1%	2.0%	-1.0%	-6.6%	7.2%	-1.0%
Transfer Payments	17.1%	14.9%	4.1%	0.2%	0.8%	4.7%	4.3%
Wages & Salaries	-6.6%	0.9%	2.1%	-2.5%	-2.4%	0.4%	3.4%
Other Labor Income	-13.6%	10.9%	2.9%	-3.6%	0.6%	3.7%	7.1%
Proprietors Income	65.7%	8.7%	13.7%	-15.9%	17.1%	0.6%	-3.4%
Private Sector	-12.5%	0.2%	1.9%	-2.9%	-1.2%	-0.6%	3.0%
Government Sector	12.9%	22.7%	5.0%	1.5%	5.4%	4.9%	4.0%
WYANDOTTE							
Total Personal Income	1.9%	0.6%	2.6%	-2.2%	-1.1%	0.5%	0.9%
Per Capita Personal Income	4.3%	4.7%	3.0%	-1.3%	-0.1%	1.3%	1.8%
Nonfarm Income	1.7%	0.9%	2.7%	-2.2%	-1.1%	0.6%	0.9%
Farm Income	312.2%	-117.0%	-34.4%	22.4%	-29.5%	-109.0%	232.3%
Dividends, Interest, Rent	29.9%	0.9%	0.8%	-7.8%	2.1%	6.9%	-0.5%
Transfer Payments	2.6%	12.5%	8.3%	1.3%	-4.9%	4.2%	3.4%
Wages & Salaries	4.4%	-1.1%	3.7%	-3.2%	0.4%	-2.2%	0.4%
Other Labor Income	-2.0%	-6.1%	3.9%	-7.0%	0.8%	-3.8%	0.2%
Proprietors Income	5.2%	11.8%	-0.4%	4.0%	5.5%	-0.1%	2.3%
Private Sector	2.3%	-4.1%	2.6%	-4.2%	1.0%	-3.5%	0.0%
Government Sector	10.6%	16.2%	8.6%	1.0%	-0.6%	3.8%	2.6%

Source: Bureau of Economic Analysis, Table CA 5.

TABLE NE-A6

**HOUSEHOLD INCOME DISTRIBUTION FOR 1989 INCLUDING MEDIAN HOUSEHOLD INCOME
KANSAS AND NORTHEAST KANSAS COUNTIES**

	Number of Households in Each Income Class											Median Household Income
	\$0 to \$9999	\$10,000 to \$19,999	\$20,000 to \$29,999	\$30,000 to \$39,999	\$40,000 to \$49,999	\$50,000 to \$74,999	\$75,000 to \$99,999	\$100,000 to \$124,999	\$125,000 to \$149,999	\$150,000 or more		
Kansas	149694	187992	177289	146721	101993	122247	33394	11842	4811	10270		\$27,291
Atchison	1225	1414	1357	926	460	498	128	44	5	35		22,339
Brown	1010	1138	928	601	299	274	70	42	9	19		20,392
Doniphan	694	692	769	428	226	209	17	24	4	10		22,102
Douglas	6697	5780	4657	4282	3140	3707	1037	361	153	291		25,244
Franklin	1474	1846	1701	1400	850	836	139	74	0	56		24,981
Jackson	840	878	783	686	464	508	54	15	24	21		25,398
Jefferson	779	1162	1083	1039	766	744	129	61	34	24		29,048
Johnson	7763	14292	20128	20442	18152	31927	12166	5038	2116	4675		42,741
Leavenworth	2219	3008	3565	3527	2819	3392	802	146	98	74		32,500
Miami	1206	1537	1597	1419	972	1272	237	91	34	73		29,259
Nemaha	846	943	938	498	360	282	60	28	23	22		22,144
Osage	975	1328	1221	1049	610	527	85	7	5	18		24,867
Shawnee	8162	11993	11766	10621	7392	9583	2458	758	283	571		29,879
Wyandotte	12642	12907	12221	9595	6149	6256	1216	285	69	130		23,780

Source: Bureau of the Census, 1990 Census of Population and Housing.

TABLE NE-A7

**SHIFT-SHARE ANALYSIS OF EMPLOYMENT GROWTH
FOR KANSAS, NORTHEAST KANSAS, AND ITS LARGE COUNTIES**

KANSAS

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.050%	-0.015%	-0.043%	0.007%
Mining	0.005%	1.027%	-0.572%	-0.216%
Construction	0.073%	-0.908%	0.004%	-0.634%
Manufacturing	0.133%	-0.707%	0.003%	1.060%
Trans & Pub. Ut.	0.064%	-0.270%	0.149%	-0.580%
Wholesale Trade	0.051%	-0.315%	0.063%	-0.249%
Retail Trade	0.117%	-1.441%	0.068%	-0.447%
F.I.R.E.	-0.082%	-0.293%	-0.034%	-0.298%
Services	-0.450%	-2.026%	-0.564%	-0.639%

Aggregate Regional Analysis	1980-85	1985-90
Growth Rate of Kansas	6.98%	9.47%
National Component	12.07%	12.40%
Structural Component	-0.14%	-0.93%
Differential Component	-4.95%	-1.99%

NORTHEAST KANSAS

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.091%	0.075%	-0.079%	0.151%
Mining	-0.003%	0.199%	0.139%	-0.011%
Construction	0.003%	0.363%	0.029%	-0.071%
Manufacturing	0.257%	0.565%	0.006%	-0.308%
Trans & Pub. Ut.	0.094%	0.026%	0.189%	0.782%
Wholesale Trade	0.129%	0.442%	0.173%	0.008%
Retail Trade	0.179%	-0.681%	0.050%	1.519%
F.I.R.E.	0.336%	0.375%	0.223%	0.645%
Services	-0.085%	-0.181%	-0.239%	2.396%

Aggregate Regional Analysis	1980-85	1985-90
Growth Rate of Northeast Kansas	14.07%	18.08%
National Component	12.07%	12.40%
Structural Component	0.82%	0.49%
Differential Component	1.18%	5.11%

REST OF KANSAS

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.027%	-0.066%	-0.021%	-0.082%
Mining	0.010%	1.488%	-1.010%	-0.342%
Construction	0.113%	-1.615%	-0.012%	-0.980%
Manufacturing	0.065%	-1.415%	0.001%	1.903%
Trans & Pub. Ut.	0.048%	-0.435%	0.123%	-1.419%
Wholesale Trade	0.008%	-0.737%	-0.005%	-0.407%
Retail Trade	0.082%	-1.863%	0.079%	-1.658%
F.I.R.E.	-0.314%	-0.664%	-0.192%	-0.878%
Services	-0.653%	-3.053%	-0.765%	-2.508%

Aggregate Regional Analysis	1980-85	1985-90
Regional Growth Rate	3.04%	4.17%
National Component	12.07%	12.40%
Structural Component	-0.67%	-1.80%
Differential Component	-8.36%	-6.37%

DOUGLAS

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.133%	-0.078%	-0.147%	0.395%
Mining	-0.004%	0.150%	0.193%	-0.062%
Construction	0.151%	-1.239%	0.010%	2.012%
Manufacturing	0.070%	-0.583%	0.002%	1.814%
Trans & Pub. Ut.	-0.018%	-0.707%	-0.105%	-0.493%
Wholesale Trade	-0.229%	0.297%	-0.247%	1.193%
Retail Trade	0.909%	-0.423%	0.854%	3.038%
F.I.R.E.	-0.234%	-0.180%	-0.155%	1.683%
Services	0.017%	1.325%	0.342%	5.281%

Aggregate Regional Analysis	1980-85	1985-90
Regional Growth Rate	11.16%	28.00%
National Component	12.07%	12.40%
Structural Component	0.53%	0.75%
Differential Component	-1.44%	14.86%

JOHNSON

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.069%	0.229%	-0.058%	0.307%
Mining	-0.003%	0.351%	0.142%	0.015%
Construction	-0.049%	1.711%	-0.006%	0.163%
Manufacturing	0.466%	2.047%	0.011%	1.248%
Trans & Pub. Ut.	-0.053%	1.484%	-0.076%	3.409%
Wholesale Trade	0.179%	2.811%	0.273%	0.578%
Retail Trade	0.504%	1.517%	0.146%	3.450%
F.I.R.E.	1.008%	3.482%	0.657%	1.796%
Services	0.246%	5.461%	0.026%	5.729%

Aggregate Regional Analysis	1980-85	1985-90
Regional Growth Rate	33.39%	30.21%
National Component	12.07%	12.40%
Structural Component	2.23%	1.11%
Differential Component	19.09%	16.70%

LEAVENWORTH

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	0.122%	0.223%	0.196%	-0.229%
Mining	-0.004%	0.194%	0.193%	0.132%
Construction	0.266%	1.947%	0.575%	-0.382%
Manufacturing	0.115%	-5.399%	0.008%	-2.341%
Trans & Pub. Ut.	-0.035%	-0.575%	-0.096%	-0.342%
Wholesale Trade	-0.282%	0.076%	-0.316%	-0.004%
Retail Trade	0.557%	-2.083%	0.506%	0.788%
F.I.R.E.	0.272%	-0.020%	0.254%	0.075%
Services	0.138%	-3.066%	-0.018%	3.421%

Aggregate Regional Analysis	1980-85	1985-90
Regional Growth Rate	4.52%	14.81%
National Component	12.07%	12.40%
Structural Component	1.15%	1.30%
Differential Component	-8.70%	1.12%

SHAWNEE

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.152%	0.109%	-0.121%	-0.010%
Mining	-0.003%	0.152%	0.165%	-0.003%
Construction	-0.010%	-0.807%	-0.051%	-0.118%
Manufacturing	0.442%	0.026%	0.009%	-0.219%
Trans & Pub. Ut.	0.216%	-0.549%	0.487%	-1.477%
Wholesale Trade	0.075%	-0.923%	0.058%	-1.902%
Retail Trade	0.031%	-1.804%	-0.003%	1.948%
F.I.R.E.	0.572%	-1.897%	0.240%	-0.228%
Services	0.569%	-3.557%	0.328%	-0.621%

Aggregate Regional Analysis	1980-85	1985-90
Regional Growth Rate	4.56%	10.88%
National Component	12.07%	12.40%
Structural Component	1.74%	1.11%
Differential Component	-9.25%	-2.63%

WYANDOTTE

Sector Analysis	1980-1985		1985-1990	
	Structural Component	Differential Component	Structural Component	Differential Component
Ag. Services	-0.164%	-0.099%	-0.176%	0.065%
Mining	-0.004%	-0.066%	0.255%	-0.011%
Construction	-0.070%	0.234%	0.040%	-1.229%
Manufacturing	-0.196%	1.493%	-0.010%	-6.044%
Trans & Pub. Ut.	0.292%	-1.346%	0.616%	-0.742%
Wholesale Trade	0.284%	-0.831%	0.356%	0.677%
Retail Trade	-0.536%	-1.517%	-0.496%	-3.214%
F.I.R.E.	-0.567%	-1.594%	-0.459%	-0.981%
Services	-1.357%	-4.383%	-1.740%	0.065%

Aggregate Regional Analysis	1980-85	1985-90
Growth Rate of Wyandotte County	1.64%	-0.63%
National Component	12.07%	12.40%
Structural Component	-2.32%	-1.62%
Differential Component	-8.11%	-11.41%

Source: Bureau of Economic Analysis, Table CA 25.

TABLE NE-A8

**EMPLOYMENT GROWTH RATES BY SECTOR FOR U.S., KANSAS,
NORTHEAST KANSAS, ITS SUB-REGIONS, AND LARGE COUNTIES**

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
UNITED STATES							
Total Employment	9.7%	11.4%	2.0%	2.7%	2.8%	2.0%	1.3%
Farm	-9.5%	-10.2%	-3.6%	-1.7%	-0.1%	-3.2%	-2.1%
Nonfarm	10.4%	12.0%	2.1%	2.8%	2.9%	2.2%	1.4%
Wage & Salary	7.4%	11.9%	1.9%	2.7%	3.0%	2.4%	1.4%
Proprietors	25.1%	8.3%	2.2%	2.7%	2.1%	-0.3%	1.3%
Farm	-1.9%	-9.9%	-4.0%	-3.0%	-0.8%	-1.1%	-1.3%
Nonfarm	30.7%	11.1%	3.2%	3.5%	2.5%	-0.2%	1.6%
Private Sector	12.1%	12.4%	2.2%	3.1%	3.1%	2.2%	1.3%
Ag. Services	24.8%	22.2%	3.7%	8.7%	4.6%	0.9%	2.7%
Mining	0.3%	-22.8%	-14.5%	-6.2%	-1.8%	-3.1%	1.1%
Construction	13.6%	12.9%	4.6%	2.5%	3.3%	1.6%	0.3%
Manufacturing	-4.8%	-0.1%	-1.4%	0.4%	1.9%	0.4%	-1.3%
Trans & Pub. Ut.	4.8%	11.0%	0.8%	2.7%	2.4%	1.9%	2.7%
Wholesale Trade	6.7%	8.3%	0.6%	2.4%	2.5%	3.6%	-1.0%
Retail Trade	13.2%	12.6%	2.4%	3.5%	3.1%	2.6%	0.5%
F.I.R.E.	20.6%	11.8%	4.7%	4.0%	2.4%	-0.5%	0.8%
Services	25.7%	22.5%	4.2%	4.5%	4.3%	3.9%	3.8%
Government	2.5%	9.8%	2.0%	1.7%	1.9%	1.9%	2.0%
Fed. Civilian	0.4%	7.3%	1.1%	1.6%	1.1%	0.8%	2.6%
Military	11.7%	-2.6%	1.4%	0.8%	-1.1%	-0.1%	-3.6%
State & Local	1.2%	12.8%	2.2%	2.0%	2.6%	2.5%	2.9%
KANSAS							
Total Employment	5.3%	8.7%	0.5%	2.1%	2.3%	1.7%	1.8%
Farm	-7.6%	-10.6%	-7.3%	1.4%	-1.1%	-1.9%	-2.0%
Nonfarm	6.4%	10.2%	1.1%	2.1%	2.5%	2.0%	2.1%
Wage & Salary	2.2%	11.0%	1.1%	2.4%	2.7%	2.3%	2.1%
Proprietors	18.9%	0.1%	-1.7%	0.7%	0.7%	-0.4%	0.9%
Farm	0.4%	-6.6%	-4.0%	-1.2%	-1.6%	0.1%	0.0%
Nonfarm	27.7%	2.7%	-0.8%	1.3%	1.5%	-0.6%	1.2%
Private Sector	7.0%	9.5%	0.5%	2.1%	2.5%	2.0%	2.1%
Ag. Services	22.9%	22.9%	1.3%	11.0%	3.2%	1.8%	4.0%
Mining	35.4%	-28.7%	-18.5%	-4.0%	-4.3%	-4.8%	0.1%
Construction	0.3%	3.0%	2.9%	1.4%	-3.6%	-1.2%	3.6%
Manufacturing	-8.3%	5.9%	0.2%	0.8%	3.0%	0.9%	1.0%
Trans & Pub. Ut.	1.2%	3.0%	-2.7%	0.5%	1.0%	3.2%	1.0%
Wholesale Trade	2.3%	4.7%	-0.2%	0.4%	1.7%	1.5%	1.2%
Retail Trade	6.3%	10.4%	0.6%	2.5%	3.6%	2.7%	0.6%
F.I.R.E.	17.0%	8.4%	2.4%	3.4%	2.3%	-1.0%	1.1%
Services	17.7%	20.3%	3.1%	3.4%	4.0%	4.1%	4.3%
Government	3.8%	13.2%	3.6%	2.4%	2.5%	2.1%	2.1%
Fed. Civilian	0.4%	8.7%	5.2%	1.2%	2.1%	0.4%	-0.4%
Military	19.6%	11.9%	4.6%	8.5%	0.9%	-0.5%	-1.8%
State & Local	0.6%	14.3%	3.0%	0.8%	3.0%	3.1%	3.6%

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
NORTHEAST KANSAS							
Total Employment	11.5%	16.7%	4.0%	3.5%	3.4%	2.6%	2.1%
Farm	-2.9%	-9.3%	-6.2%	0.4%	-1.2%	-1.2%	-1.3%
Nonfarm	12.0%	17.5%	4.3%	3.6%	3.6%	2.7%	2.2%
Wage & Salary	8.8%	18.3%	4.4%	3.7%	3.5%	3.2%	2.3%
Proprietors	26.9%	8.5%	1.9%	2.4%	3.2%	-0.6%	1.4%
Farm	3.4%	-6.6%	-4.0%	-1.2%	-1.6%	0.1%	0.0%
Nonfarm	32.8%	11.5%	3.0%	3.0%	4.1%	-0.7%	1.6%
Private Sector	14.1%	18.1%	4.3%	3.7%	3.9%	2.8%	2.2%
Ag. Services	36.8%	42.3%	5.9%	14.3%	5.2%	5.6%	5.8%
Mining	42.4%	-24.7%	-10.6%	-2.3%	-6.1%	-7.1%	-1.2%
Construction	19.3%	11.8%	11.8%	6.8%	-4.8%	-2.9%	1.3%
Manufacturing	-1.6%	-2.1%	0.9%	-3.8%	2.5%	-0.7%	-1.0%
Trans & Pub. Ut.	5.1%	21.3%	1.5%	2.8%	3.6%	8.3%	3.6%
Wholesale Trade	12.0%	8.4%	3.9%	3.6%	-0.7%	2.0%	-0.5%
Retail Trade	10.0%	20.0%	3.1%	5.5%	6.6%	3.0%	0.5%
F.I.R.E.	24.3%	17.6%	5.7%	5.2%	4.3%	-0.4%	1.8%
Services	25.0%	30.7%	5.8%	5.0%	5.9%	5.5%	5.3%
Government	3.9%	15.1%	4.4%	3.1%	2.0%	2.6%	2.3%
Fed. Civilian	1.7%	21.5%	8.1%	3.2%	4.9%	2.8%	0.9%
Military	33.5%	29.9%	9.5%	16.0%	1.3%	0.5%	0.4%
State & Local	0.2%	11.2%	2.7%	0.5%	1.5%	3.0%	3.0%

REST OF KANSAS							
Total Employment	2.0%	4.1%	-1.5%	1.2%	1.5%	1.2%	1.6%
Farm	-8.4%	-10.9%	-7.6%	1.6%	-1.0%	-2.0%	-2.1%
Nonfarm	3.2%	5.6%	-0.9%	1.2%	1.8%	1.5%	2.0%
Wage & Salary	-1.6%	6.4%	-1.0%	1.6%	2.1%	1.6%	1.9%
Proprietors	15.9%	-3.4%	-3.2%	-0.1%	-0.4%	-0.4%	0.7%
Farm	-0.2%	-6.6%	-4.0%	-1.2%	-1.6%	0.1%	0.0%
Nonfarm	25.2%	-1.8%	-2.8%	0.4%	0.1%	-0.6%	1.0%
Private Sector	3.0%	4.2%	-1.8%	1.0%	1.5%	1.4%	2.0%
Ag. Services	17.4%	14.0%	-0.8%	9.4%	2.2%	-0.3%	3.1%
Mining	35.0%	-28.9%	-19.0%	-4.2%	-4.1%	-4.7%	0.2%
Construction	-9.1%	-2.7%	-2.8%	-2.6%	-2.7%	0.2%	5.4%
Manufacturing	-11.3%	10.0%	-0.2%	3.1%	3.2%	1.6%	2.0%
Trans & Pub. Ut.	-1.2%	-9.2%	-5.5%	-1.2%	-0.9%	-0.8%	-1.2%
Wholesale Trade	-4.7%	1.6%	-3.6%	-2.6%	4.1%	1.0%	2.9%
Retail Trade	4.1%	4.6%	-0.9%	0.7%	1.6%	2.6%	0.6%
F.I.R.E.	11.0%	-0.1%	-0.6%	1.7%	0.3%	-1.6%	0.2%
Services	13.3%	13.3%	1.3%	2.3%	2.6%	3.0%	3.5%
Government	3.7%	12.0%	3.1%	1.9%	2.8%	1.7%	1.9%
Fed. Civilian	-0.8%	-2.4%	2.6%	-0.6%	-0.6%	-1.9%	-1.8%
Military	15.3%	5.4%	2.9%	5.6%	0.8%	-1.0%	-2.7%
State & Local	0.9%	16.3%	3.2%	1.0%	4.0%	3.2%	4.0%

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
NORTHERN TIER							
Total Employment	-3.4%	9.1%	-2.2%	4.5%	2.8%	1.8%	1.9%
Farm	-4.9%	-10.5%	-6.9%	0.4%	-1.0%	-1.6%	-1.6%
Nonfarm	-3.0%	13.6%	-1.1%	5.4%	3.6%	2.5%	2.6%
Wage & Salary	-6.1%	13.3%	-1.5%	6.0%	3.4%	2.6%	2.4%
Proprietors	3.7%	-0.6%	-3.7%	1.0%	1.5%	-0.1%	0.8%
Farm	1.1%	-7.0%	-4.1%	-1.7%	-1.4%	0.1%	0.0%
Nonfarm	6.8%	6.3%	-3.4%	4.0%	4.4%	-0.3%	1.7%
Private Sector	-4.5%	14.0%	-2.2%	6.1%	3.8%	3.2%	2.6%
Ag. Services	13.8%	26.2%	-9.7%	18.8%	14.5%	0.0%	2.8%
Mining	-30.9%	-72.9%	10.6%	1.1%	-72.6%	23.1%	-28.1%
Construction	-8.4%	10.1%	-11.5%	8.2%	7.7%	6.3%	0.3%
Manufacturing	-17.8%	27.7%	-4.9%	9.4%	5.2%	11.0%	5.1%
Trans & Pub. Ut.	2.9%	-16.6%	3.1%	5.2%	-25.2%	-3.3%	6.3%
Wholesale Trade	-9.3%	-7.2%	0.2%	6.2%	2.1%	-15.5%	1.2%
Retail Trade	-5.6%	17.0%	-3.3%	5.6%	3.8%	7.1%	3.0%
F.I.R.E.	7.9%	33.2%	3.4%	12.5%	9.2%	3.1%	1.7%
Services	4.9%	8.2%	-1.4%	2.4%	2.4%	3.4%	1.2%
Government	3.7%	12.2%	3.8%	2.7%	2.9%	-0.3%	2.6%
Fed. Civilian	-7.5%	5.2%	1.1%	3.6%	0.4%	2.1%	-2.1%
Military	62.3%	31.3%	13.6%	16.8%	-0.5%	-0.5%	0.0%
State & Local	-0.5%	10.0%	2.6%	0.2%	3.8%	-0.4%	3.5%

DOUGLAS-FRANKLIN							
Total Employment	3.9%	19.7%	2.4%	3.8%	5.0%	4.2%	3.0%
Farm	0.4%	-8.9%	-6.0%	0.5%	-1.4%	-1.0%	-1.2%
Nonfarm	4.0%	21.3%	2.9%	4.0%	5.3%	4.4%	3.1%
Wage & Salary	0.0%	23.2%	2.8%	3.9%	6.2%	5.2%	3.3%
Proprietors	23.8%	5.1%	0.9%	3.4%	-0.2%	-0.3%	1.3%
Farm	4.2%	-6.5%	-4.0%	-1.1%	-1.7%	0.2%	0.0%
Nonfarm	31.4%	8.6%	2.5%	4.7%	0.2%	-0.5%	1.6%
Private Sector	7.3%	23.0%	4.4%	4.7%	4.7%	4.3%	3.2%
Ag. Services	-9.1%	95.3%	10.7%	21.8%	9.5%	14.1%	15.9%
Mining	68.5%	-23.5%	-18.5%	16.5%	-6.0%	-11.5%	-3.2%
Construction	-5.4%	40.1%	15.4%	10.1%	6.6%	3.7%	-0.3%
Manufacturing	-10.1%	5.6%	2.1%	-4.2%	4.2%	1.9%	1.7%
Trans & Pub. Ut.	-2.0%	0.2%	1.6%	1.7%	-2.7%	-1.6%	1.3%
Wholesale Trade	-17.2%	45.2%	-1.9%	-0.4%	4.6%	21.5%	16.9%
Retail Trade	7.6%	22.0%	5.6%	6.1%	2.4%	2.2%	4.1%
F.I.R.E.	19.4%	23.1%	-0.2%	8.0%	7.3%	3.6%	2.8%
Services	26.8%	33.4%	5.8%	7.1%	7.0%	6.9%	2.9%
Government	-4.2%	16.3%	-1.5%	1.9%	7.2%	4.9%	3.0%
Fed. Civilian	-1.9%	15.5%	2.1%	2.4%	-0.7%	7.6%	3.3%
Military	72.2%	34.8%	11.0%	19.4%	0.6%	1.0%	0.2%
State & Local	-8.0%	14.6%	-2.8%	0.1%	8.5%	5.2%	3.3%

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
TOPEKA AREA							
Total Employment	3.7%	10.5%	1.2%	3.2%	3.4%	1.5%	0.8%
Farm	-2.4%	-8.5%	-5.7%	0.4%	-1.4%	-0.9%	-1.0%
Nonfarm	4.0%	11.3%	1.5%	3.3%	3.6%	1.6%	0.9%
Wage & Salary	1.5%	11.8%	1.5%	3.5%	3.7%	1.9%	0.7%
Proprietors	17.3%	3.5%	-0.4%	1.3%	1.8%	-0.4%	1.2%
Farm	3.2%	-6.4%	-4.0%	-1.0%	-1.7%	0.2%	0.0%
Nonfarm	22.4%	6.5%	0.6%	1.9%	2.7%	-0.5%	1.6%
Private Sector	3.9%	10.4%	1.0%	3.5%	3.6%	1.4%	0.7%
Ag. Services	34.9%	18.7%	10.6%	9.8%	2.7%	-3.4%	-1.4%
Mining	16.3%	-22.8%	4.7%	-17.5%	-1.0%	-10.4%	0.8%
Construction	3.8%	8.9%	6.1%	3.4%	-4.5%	-0.9%	5.0%
Manufacturing	-5.4%	0.0%	-0.6%	2.6%	-1.5%	2.0%	-2.4%
Trans & Pub. Ut.	-1.7%	-3.0%	-4.9%	-3.0%	2.2%	3.8%	-0.9%
Wholesale Trade	-6.5%	-19.5%	0.8%	0.8%	-23.0%	-1.0%	4.0%
Retail Trade	2.9%	21.0%	-0.6%	5.1%	17.5%	-0.9%	-0.4%
F.I.R.E.	1.8%	9.2%	1.1%	4.4%	1.8%	1.8%	-0.2%
Services	13.5%	19.1%	3.4%	5.2%	4.7%	2.7%	1.8%
Government	4.3%	14.5%	3.4%	2.5%	3.7%	2.6%	1.5%
Fed. Civilian	-2.5%	-0.9%	1.4%	-2.3%	2.0%	0.3%	-2.3%
Military	62.3%	44.1%	18.9%	19.5%	1.4%	0.3%	-0.2%
State & Local	2.1%	14.2%	2.3%	1.4%	4.3%	3.2%	2.3%

WYJON AREA							
Total Employment	17.3%	19.1%	5.7%	3.5%	3.3%	2.8%	2.5%
Farm	-3.2%	-9.2%	-6.2%	0.5%	-1.3%	-1.2%	-1.3%
Nonfarm	17.6%	19.4%	5.8%	3.5%	3.3%	2.9%	2.5%
Wage & Salary	14.4%	20.3%	6.1%	3.6%	3.0%	3.5%	2.7%
Proprietors	35.9%	12.3%	3.7%	2.8%	4.6%	-0.8%	1.5%
Farm	5.4%	-6.6%	-4.1%	-1.2%	-1.6%	0.1%	0.0%
Nonfarm	39.1%	13.8%	4.3%	3.0%	5.0%	-0.8%	1.6%
Private Sector	20.3%	20.2%	5.8%	3.5%	4.0%	3.0%	2.6%
Ag. Services	45.9%	47.0%	5.7%	14.7%	4.8%	8.1%	7.0%
Mining	57.7%	-22.7%	-14.8%	-2.0%	-2.3%	-4.9%	-0.4%
Construction	31.7%	9.5%	14.4%	7.4%	-6.7%	-4.9%	0.5%
Manufacturing	2.3%	-6.0%	1.6%	-6.2%	3.1%	-2.8%	-1.6%
Trans & Pub. Ut.	9.5%	36.7%	4.3%	5.2%	6.4%	11.3%	5.2%
Wholesale Trade	21.4%	14.3%	5.1%	4.3%	3.8%	2.7%	-2.1%
Retail Trade	14.2%	19.5%	4.4%	5.5%	4.0%	4.3%	0.1%
F.I.R.E.	34.5%	19.2%	7.7%	4.9%	4.7%	-1.5%	2.4%
Services	31.3%	36.0%	7.2%	4.7%	6.4%	6.3%	7.0%
Government	5.8%	15.4%	6.2%	3.7%	0.0%	2.2%	2.4%
Fed. Civilian	4.0%	30.8%	11.2%	5.2%	6.3%	3.3%	1.8%
Military	25.1%	26.4%	7.2%	14.8%	1.4%	0.6%	0.5%
State & Local	2.0%	8.4%	4.6%	0.2%	-2.2%	2.5%	3.3%

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
DOUGLAS							
Total Employment	5.8%	23.9%	2.8%	4.7%	5.8%	5.5%	3.2%
Farm	-1.6%	-9.0%	-5.9%	0.3%	-1.3%	-1.1%	-1.1%
Nonfarm	6.0%	24.9%	3.1%	4.8%	6.0%	5.6%	3.3%
Wage & Salary	2.1%	26.6%	2.7%	4.8%	6.7%	6.6%	3.5%
Proprietors	30.5%	10.0%	3.5%	4.2%	1.0%	-0.4%	1.4%
Farm	2.5%	-6.5%	-4.0%	-1.1%	-1.6%	0.1%	0.0%
Nonfarm	37.6%	13.1%	4.9%	5.1%	1.4%	-0.5%	1.7%
Private Sector	11.2%	28.0%	5.2%	6.1%	5.1%	5.5%	3.3%
Ag. Services	7.8%	111.7%	18.9%	30.3%	7.0%	12.0%	14.1%
Mining	61.8%	-40.4%	-34.8%	13.8%	-4.5%	-11.1%	-5.4%
Construction	-3.2%	44.1%	18.1%	11.4%	8.4%	2.1%	-1.0%
Manufacturing	-7.5%	9.9%	3.0%	-0.3%	2.1%	4.1%	0.7%
Trans & Pub. Ut.	-7.2%	1.0%	-0.2%	0.0%	0.4%	0.2%	0.7%
Wholesale Trade	16.7%	46.6%	-7.3%	1.2%	1.9%	27.2%	20.5%
Retail Trade	11.7%	23.9%	5.4%	6.5%	1.5%	3.1%	5.4%
F.I.R.E.	18.1%	33.5%	3.0%	8.4%	9.1%	5.8%	3.6%
Services	30.5%	39.0%	6.7%	8.5%	8.7%	7.8%	2.5%
Government	-5.1%	16.9%	-2.5%	1.1%	8.5%	5.9%	3.3%
Fed. Civilian	-0.4%	17.6%	2.5%	2.2%	-1.4%	9.2%	4.2%
Military	74.2%	34.8%	10.4%	19.5%	0.6%	1.3%	0.2%
State & Local	-8.8%	15.4%	-3.9%	-0.7%	9.9%	6.2%	3.5%

JOHNSON							
Total Employment	31.4%	31.0%	8.4%	6.0%	5.4%	4.5%	3.4%
Farm	-7.9%	-10.9%	-7.3%	1.1%	-1.1%	-1.9%	-2.0%
Nonfarm	31.7%	31.2%	8.5%	6.0%	5.4%	4.5%	3.4%
Wage & Salary	27.9%	34.3%	9.0%	6.6%	5.3%	5.7%	3.8%
Proprietors	48.8%	16.4%	5.9%	3.1%	6.0%	-1.0%	1.5%
Farm	4.3%	-6.8%	-4.0%	-1.3%	-1.6%	0.1%	-0.1%
Nonfarm	50.3%	17.0%	6.2%	3.2%	6.2%	-1.0%	1.6%
Private Sector	33.4%	30.2%	8.1%	5.9%	5.2%	4.6%	3.3%
Ag. Services	56.9%	58.7%	10.9%	12.5%	5.6%	9.3%	10.1%
Mining	84.2%	-20.3%	-13.9%	3.8%	-4.2%	-4.6%	-2.5%
Construction	42.5%	15.5%	16.1%	8.7%	-3.8%	-4.8%	0.0%
Manufacturing	10.4%	11.1%	3.1%	2.3%	3.9%	0.6%	0.7%
Trans & Pub. Ut.	33.3%	76.6%	11.4%	14.8%	9.0%	16.1%	9.2%
Wholesale Trade	37.6%	14.5%	7.8%	4.9%	3.1%	3.6%	-5.3%
Retail Trade	19.6%	28.8%	6.1%	5.9%	5.8%	7.2%	1.2%
F.I.R.E.	46.7%	24.0%	9.0%	6.0%	4.8%	-0.8%	3.3%
Services	45.0%	41.2%	9.1%	5.1%	7.5%	6.8%	7.3%
Government	17.2%	40.7%	12.4%	7.0%	7.8%	3.9%	4.4%
Fed. Civilian	2.0%	55.8%	15.7%	6.7%	14.2%	4.6%	5.5%
Military	107.0%	46.1%	11.4%	23.8%	2.7%	3.3%	0.0%
State & Local	7.5%	36.1%	12.0%	2.5%	8.1%	3.9%	5.6%

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
LEAVENWORTH							
Total Employment	2.6%	12.1%	3.1%	2.9%	2.7%	0.8%	2.2%
Farm	1.2%	-8.4%	-5.6%	0.1%	-1.3%	-0.9%	-0.9%
Nonfarm	2.7%	13.4%	3.6%	3.1%	2.9%	0.8%	2.3%
Wage & Salary	0.5%	13.6%	3.9%	2.9%	2.9%	0.9%	2.3%
Proprietors	14.7%	4.8%	-0.9%	3.1%	1.5%	-0.2%	1.2%
Farm	8.5%	-6.6%	-4.1%	-1.1%	-1.6%	0.1%	0.0%
Nonfarm	17.9%	10.0%	0.5%	5.0%	2.8%	-0.3%	1.7%
Private Sector	4.5%	14.8%	4.5%	1.9%	2.9%	1.5%	3.3%
Ag. Services	39.9%	10.6%	-8.9%	22.4%	-0.4%	-2.7%	2.4%
Mining	110.0%	14.3%	50.0%	-23.8%	2.1%	-14.3%	14.3%
Construction	37.2%	9.4%	17.7%	-6.9%	-4.5%	-0.9%	5.5%
Manufacturing	-30.8%	-17.1%	-10.1%	-11.3%	4.3%	-3.9%	3.7%
Trans & Pub. Ut.	-5.6%	4.2%	2.7%	0.0%	-1.0%	2.5%	0.0%
Wholesale Trade	10.2%	8.1%	4.8%	-7.4%	11.4%	-0.7%	0.7%
Retail Trade	4.6%	15.9%	6.9%	9.8%	-1.0%	0.1%	-0.4%
F.I.R.E.	20.4%	12.4%	7.7%	-1.3%	4.5%	-1.3%	2.5%
Services	14.6%	33.8%	4.1%	5.5%	8.0%	6.5%	6.0%
Government	0.9%	12.0%	2.7%	4.3%	3.0%	0.2%	1.3%
Fed. Civilian	8.3%	11.9%	2.0%	5.9%	2.7%	1.1%	-0.2%
Military	-11.4%	7.1%	1.5%	5.1%	0.8%	-2.0%	1.7%
State & Local	11.2%	19.2%	5.4%	0.5%	6.8%	1.9%	3.4%
SHAWNEE							
Total Employment	4.1%	11.1%	1.3%	3.2%	3.8%	1.7%	0.7%
Farm	-8.5%	-10.0%	-7.1%	1.5%	-1.2%	-1.8%	-1.7%
Nonfarm	4.3%	11.3%	1.4%	3.2%	3.8%	1.7%	0.7%
Wage & Salary	2.1%	11.8%	1.4%	3.4%	3.9%	2.0%	0.6%
Proprietors	21.3%	5.7%	0.5%	1.5%	2.8%	-0.6%	1.5%
Farm	4.6%	-6.3%	-4.0%	-0.8%	-1.8%	0.1%	0.0%
Nonfarm	23.0%	6.7%	0.9%	1.7%	3.1%	-0.7%	1.6%
Private Sector	4.6%	10.9%	1.0%	3.5%	3.9%	1.5%	0.6%
Ag. Services	53.4%	20.3%	0.5%	14.9%	2.2%	-1.0%	3.0%
Mining	44.1%	-23.5%	-1.1%	-23.2%	-2.5%	1.5%	1.8%
Construction	0.6%	10.9%	4.8%	8.1%	-5.1%	-1.2%	4.4%
Manufacturing	-4.6%	-1.8%	0.0%	0.2%	-1.7%	2.6%	-2.8%
Trans & Pub. Ut.	-0.3%	-3.3%	-5.1%	-3.0%	2.1%	4.1%	-1.2%
Wholesale Trade	-5.6%	-19.7%	1.6%	1.4%	-24.1%	-1.3%	4.1%
Retail Trade	4.3%	22.3%	-0.7%	4.8%	19.4%	-1.3%	-0.2%
F.I.R.E.	3.7%	9.7%	1.7%	4.5%	1.7%	1.8%	-0.3%
Services	13.6%	20.6%	3.4%	5.4%	5.3%	3.0%	2.1%
Government	3.3%	12.9%	2.9%	2.2%	3.7%	2.5%	1.0%
Fed. Civilian	-2.1%	-0.9%	1.9%	-2.6%	2.1%	0.4%	-2.5%
Military	60.0%	45.7%	20.5%	19.2%	1.6%	0.1%	-0.2%
State & Local	1.2%	12.5%	1.6%	1.3%	4.2%	3.2%	1.7%

	1980-85	1985-90	1985-86	1986-87	1987-88	1988-89	1989-90
WYANDOTTE							
Total Employment	1.4%	-1.6%	1.6%	-1.5%	-1.3%	-0.6%	0.2%
Farm	-16.8%	-12.3%	-8.9%	2.5%	-1.1%	-2.5%	-2.6%
Nonfarm	1.5%	-1.5%	1.6%	-1.5%	-1.3%	-0.6%	0.2%
Wage & Salary	0.8%	-1.9%	1.8%	-1.7%	-1.4%	-0.6%	0.1%
Proprietors	9.8%	2.0%	-1.1%	2.0%	-0.1%	-0.3%	1.7%
Farm	-2.7%	-6.8%	-4.5%	-1.0%	-1.9%	0.5%	0.0%
Nonfarm	10.2%	2.3%	-1.0%	2.1%	-0.1%	-0.4%	1.7%
Private Sector	1.6%	-0.6%	1.2%	-1.8%	1.2%	-1.2%	0.1%
Ag. Services	-5.1%	43.1%	2.7%	34.2%	0.0%	15.2%	-9.8%
Mining	-43.1%	-35.5%	-35.5%	-15.0%	14.7%	5.1%	-2.4%
Construction	17.6%	-5.5%	10.5%	7.9%	-14.5%	-6.5%	-1.0%
Manufacturing	0.7%	-22.5%	1.3%	-14.0%	1.9%	-7.5%	-5.7%
Trans & Pub. Ut.	-6.1%	4.5%	-2.2%	-4.4%	5.1%	6.7%	-0.3%
Wholesale Trade	-1.1%	14.8%	-0.3%	3.5%	5.1%	0.7%	5.1%
Retail Trade	3.7%	-7.3%	-1.1%	3.3%	-0.5%	-4.8%	-4.2%
F.I.R.E.	-7.5%	-7.2%	-0.2%	0.5%	3.7%	-6.0%	-5.0%
Services	5.7%	22.8%	2.7%	3.7%	2.7%	5.0%	6.9%
Government	0.9%	-4.8%	3.2%	-0.2%	-9.8%	1.7%	0.8%
Fed. Civilian	-4.4%	53.1%	34.3%	1.3%	4.2%	7.0%	1.0%
Military	66.0%	35.0%	13.2%	18.9%	0.2%	0.4%	-0.4%
State & Local	-2.0%	-13.0%	-0.2%	-2.3%	-12.6%	1.1%	0.9%

Source: Bureau of Economic Analysis, Table CA 25.

TABLE NE-A9
OCCUPATIONS OF EMPLOYED PERSONS, 16 YEARS OF AGE AND OLDER
KANSAS, NORTHEAST KANSAS, AND COUNTIES FOR 1990

	Percentage of Workers in Each Occupational Category						Total
	Managerial Professional & Administrative	Technical Sales & Support	Service	Farming Forestry & Fishing	Precision Craft & Repair	Operators Fabricators & Laborers	
Kansas	25.39%	30.87%	13.46%	4.62%	11.47%	14.20%	1,172,214
Northeast Kansas	29.55%	34.55%	12.34%	1.9%	9.02%	12.56%	471,881
Atchison	21.55%	24.69%	17.42%	5.74%	11.57%	19.03%	7,295
Brown	20.84%	23.81%	15.28%	13.43%	10.05%	16.59%	4,737
Doniphan	15.84%	24.69%	14.13%	12.26%	10.90%	22.18%	3,467
Douglas	30.89%	31.11%	15.43%	1.82%	8.11%	12.64%	41,086
Franklin	19.71%	25.70%	13.08%	5.46%	13.87%	22.18%	10,075
Jackson	18.38%	29.16%	12.10%	9.77%	12.88%	17.71%	5,250
Jefferson	20.27%	26.21%	13.50%	6.07%	12.73%	21.23%	7,528
Johnson	38.11%	38.50%	8.58%	0.77%	6.82%	7.22%	196,066
Leavenworth	25.25%	27.81%	18.29%	2.49%	11.72%	14.44%	23,248
Miami	19.11%	27.48%	13.50%	5.82%	15.85%	18.24%	11,093
Nemaha	18.71%	22.57%	12.45%	18.98%	10.46%	16.83%	4,820
Osage	17.34%	27.55%	15.16%	5.14%	15.51%	19.30%	6,730
Shawnee	28.03%	35.96%	14.16%	1.04%	8.65%	12.16%	80,143
Wyandotte	16.94%	33.59%	15.49%	1.03%	11.63%	21.31%	70,343

Source: Bureau of the Census, 1990 Census of Population and Housing.

TABLE NE-A10
EDUCATIONAL ATTAINMENT OF THE POPULATION 18 YEARS AND OVER
FOR KANSAS, NORTHEAST KANSAS, AND COUNTIES IN 1990

Percentage of the Population in Each Educational Category							Total
	Less than High School Degree	High School Degree	Some College No Degree	Associate Degree	Bachelor's Degree	Graduate or Profession	
Kansas	18.7%	32.4%	24.3%	5.4%	13.2%	6.1%	1,815,572
Northeast Kansas	15.6%	30.2%	24.3%	5.0%	16.8%	7.9%	704,942
Atchison County	22.4%	44.8%	16.6%	4.2%	6.8%	5.2%	12,190
Brown County	21.4%	40.8%	19.3%	6.5%	8.6%	3.3%	8,047
Doniphan County	25.5%	38.7%	20.5%	6.5%	5.9%	2.9%	6,016
Douglas County	9.1%	20.9%	37.4%	3.8%	17.9%	11.0%	65,106
Franklin County	22.5%	42.1%	19.5%	4.0%	8.1%	3.7%	15,786
Jackson County	19.2%	48.3%	18.4%	4.3%	7.0%	2.9%	8,197
Jefferson County	19.6%	45.0%	20.1%	2.9%	8.1%	4.2%	11,540
Johnson County	8.2%	21.9%	25.9%	6.3%	26.8%	11.0%	260,300
Leavenworth County	15.9%	34.1%	23.2%	5.3%	11.8%	9.8%	47,224
Miami County	22.1%	40.4%	19.7%	5.5%	8.2%	4.2%	17,042
Nemaha County	23.9%	49.1%	12.6%	2.8%	7.7%	4.0%	7,477
Osage County	22.8%	46.3%	19.4%	2.6%	6.4%	2.5%	11,064
Shawnee County	16.3%	35.6%	24.1%	3.4%	14.1%	6.6%	119,200
Wyandotte County	30.0%	36.0%	19.1%	5.1%	6.5%	3.2%	115,753

Source: Bureau of the Census, 1990 Census of Population and Housing.

TABLE NE-A11

**CLASS OF WORKER FOR KANSAS, NORTHEAST KANSAS, AND
AND ITS LARGE COUNTIES FOR EMPLOYED PERSONS 16 YEARS AND OVER**

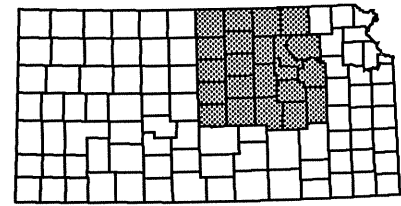
		Percentage of Each Class of Worker													
	Private Wage & Salary	Federal Government				State Government				Local Government				Unpaid Family	
		1980		1990		1980		1990		1980		1990		1980	
		1980	1990	1980	1990	1980	1990	1980	1990	1980	1990	1980	1990	1980	1990
Kansas															
		71.7%	73.9%	3.2%	3.1%	5.0%	5.8%	8.6%	7.3%	10.6%	9.3%	0.8%	0.6%	1,078,741	1,172,214
N. E. Kansas		73.3%	75.6%	4.5%	4.0%	6.6%	6.7%	7.8%	6.4%	7.2%	6.9%	0.6%	0.4%	398,695	471,881
Atchison		75.0%	73.3%	2.5%	2.7%	3.0%	6.6%	8.0%	7.6%	10.3%	8.8%	1.2%	1.1%	7,540	7,295
Brown		56.0%	67.1%	3.7%	3.1%	2.5%	4.4%	12.9%	8.3%	22.6%	16.0%	2.3%	1.0%	4,822	4,737
Doniphan		62.3%	67.9%	2.3%	2.3%	3.3%	6.1%	10.9%	7.5%	19.7%	15.3%	1.4%	0.9%	3,552	3,467
Douglas		59.6%	65.7%	2.9%	2.7%	22.7%	18.8%	7.9%	5.7%	6.4%	6.8%	0.4%	0.3%	32,464	41,086
Franklin		70.4%	74.1%	2.9%	2.0%	3.0%	4.6%	9.9%	8.2%	12.7%	10.7%	1.1%	0.4%	9,611	10,075
Jackson		60.2%	65.0%	5.0%	4.8%	6.4%	7.3%	10.5%	7.3%	16.2%	14.0%	1.7%	1.6%	4,904	5,250
Jefferson		64.8%	66.6%	4.0%	3.7%	7.1%	9.2%	9.1%	8.2%	13.8%	11.6%	1.2%	0.7%	6,647	7,528
Johnson		80.1%	82.0%	3.9%	2.9%	2.9%	2.9%	6.1%	5.3%	6.6%	6.6%	0.4%	0.3%	140,099	196,066
Leavenworth		61.5%	61.4%	16.9%	18.7%	4.2%	5.3%	8.6%	7.2%	7.8%	6.9%	0.9%	0.6%	19,453	23,248
Miami		69.1%	73.5%	2.4%	2.0%	7.5%	6.3%	8.0%	6.7%	11.6%	10.5%	1.4%	0.9%	9,060	11,093
Nemaha		53.2%	61.7%	1.8%	1.5%	1.3%	3.2%	10.8%	6.3%	29.1%	24.0%	3.7%	3.4%	4,711	4,820
Osage		64.1%	69.3%	4.4%	5.0%	6.4%	7.9%	9.5%	6.5%	14.0%	10.6%	1.6%	0.6%	6,574	6,730
Shawnee		70.6%	71.0%	4.3%	3.7%	10.6%	12.1%	8.3%	7.1%	5.9%	5.8%	0.3%	0.3%	75,971	80,143
Wyandotte		78.4%	78.8%	4.3%	4.3%	4.3%	4.8%	8.9%	8.1%	3.8%	3.8%	0.3%	0.2%	73,287	70,343

Source: Bureau of the Census, 1990 Census of Population and Housing.

North Central Kansas

by

Arthur J. Janssen



Introduction

The twenty-two county area defined as North Central Kansas bears a fairly close resemblance most non-metropolitan areas of Kansas. There are no Metropolitan Statistical Areas in North Central Kansas, so one would not ordinarily expect to see the same degree of industrial activity as in large cities. In general, economic activity in the North Central region moves at a slightly slower pace than the rest of the state. Although, the regional employment rate has not differed significantly from that of the state, median income levels and per capita income levels for the region tend to be below the state levels. North Central Kansas has also experienced a higher level of poverty than the rest of the state; in 1989, the poverty rate was 12.4 percent compared to 10.2 percent for the state of Kansas.

Among the region's counties, only Saline exceeded the state level for per capita income in 1989. The per capita income of the region was \$15,446, well below the state's \$18,104. In addition, in both median household and median family income, nearly every county falls below the state level. Surprisingly, according to Bureau of Census figures, Wabaunsee County, with a population of less than 7,000, has a higher median family income than the state; it has a higher than usual number families in the \$40,000 to \$60,000 category. Per capita personal income and population in 1989 for each of the region's counties is shown in Table NC-A1 in the Appendix to this report.

As Table NC-1 illustrates, the overall distribution of income among households in the region is similar to that of the state, but slightly skewed towards the lower income levels. The comparison of education levels shown in Table NC-2 indicates that although the percentage of the population over age eighteen that has graduated from high school is slightly higher in the region than in the state, the percentage of the population with college and graduate degrees is lower in the region than in the state.

The North Central Kansas region has a slightly older population than the state. Relative to the state, the region has about the same number of people under 20 years of age, fewer people

Table NC-1
Distribution of Income, 1989

<u>Income</u>	Percent of Households	
	<u>North Central</u>	<u>Kansas</u>
under \$10,000	18.7	15.8
\$10-10,999	24.5	19.9
\$20-29,999	20.4	18.7
\$30-39,999	15.1	15.5
\$40-59,999	9.7	10.8
\$50-69,999	4.9	6.3
\$60-74,999	3.8	5.8
\$75-99,999	1.9	3.5
\$100-124,999	0.6	1.3
\$125-149,999	0.2	0.5
\$150,000 and above	0.5	1.1

Source: Bureau of the Census. 1990 Census of Population and Housing.

Table NC-2
Education Levels
Percent of Population Over 18

<u>Highest Level of Education</u>	<u>Region</u>	<u>State</u>
Less than 9th grade	6.9%	6.9%
Between 9th and 12th grade	10.2	11.8
High School Grad	36.1	32.4
Some College	25.6	24.2
Associate Degree	5.4	5.4
Bachelors Degree	10.3	13.2
Graduate Degree	5.5	6.1

Source: Bureau of the Census, 1990 Census of Population and Housing.

in their twenties, and slightly more above thirty. Thus, the median age in the region is above that of the state, although in the more populous counties, Lyon, Geary, Riley, and Saline, the median age is below that of the state. Since the early 1980s, population in the region has been slowly declining. Obviously, there is some connection between economic conditions and demography, although the direction of influence may be subject to question. The lower levels of per capita and household incomes in the region suggest the region is not likely to witness a large influx of adults; in fact out-migration is quite probable if, as seems likely, opportunities are more abundant elsewhere. Of course, the attractiveness of an area depends on the perspective

from which one is looking. The non-metropolitan areas of the region have fared better than some rural areas in other parts of the state, but the region has not been able to perform as well as other regions with larger metropolitan areas. The region's relative lack of growing metropolitan areas may explain why there are relatively fewer people in their twenties in the region.

Income

As shown in Table NC-3, from 1969 through 1985, real personal income in the North Central Region increased at an average annual rate of 1.8 percent, compared to 2.7 percent for both the state and the nation. Since 1985, however, while the state's average annual rate of real income growth has slowed slightly to 2.2 percent, the regional rate has fallen dramatically to 0.9 percent. This progression, as well as a breakdown of personal income growth by sources, is shown in Table NC-4. Furthermore, as income growth has slowed, wage and salary income has declined as a percentage of total income. That is to say, dividends, interest, rents and transfer payments have come to account for a larger share of personal income, growing from 32.2 percent of personal income in 1980, to 36 percent in 1985, to 37.4 percent in 1990, as illustrated in Table NC-5. By way of comparison, in 1990, dividends, interest, rents, and transfer payments accounted for 33.9 percent of personal income in Kansas and 34 percent of personal income in the U.S. The fact that the sources of personal income in the region are skewed toward dividends, interest, rents, and transfer payments is consistent with the finding that the region's population tends to be older than that of the state or the nation.

For the North Central Region, government has historically been the largest source of income by sector. As Table NC-5 shows, the share of personal income accounted for by government has remained at between 18 percent and 19 percent for the last ten years. For the state and the nation, on the other hand, the proportion is about 12 percent. The region includes a major military post, Ft. Riley and two state universities (public school teachers are included under government employment). Whereas the military has been a declining influence in the region (and is expected to continue to decline), state and local government activity has increased. Other sectors having a major influence on personal income are the service sector and the manufacturing sector. On the one hand, the service sector has provided an increasing portion of personal income, while on the other hand, manufacturing has been declining. Returning to Tables NC-3 and NC-4, we see that during 1969-1985, personal income from manufacturing in the region was

Table NC-3
Average Annual Growth Rates: Real Income
North Central Region, Kansas, United States
1969 - 1985

<u>Source</u>	<u>North Central Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	-3.37%	-1.47%	2.65%
Farm	-7.05	-5.82	-3.40
Mining	3.94	6.60	6.53
Construction	1.05	2.01	1.52
Manufacturing	4.98	2.80	0.85
Transport. & Utilities	2.00	1.90	6.18
Wholesale Trade	3.46	4.32	2.64
Retail Trade	-1.47	0.15	1.07
F.I.R.E.	1.57	3.17	2.80
Services	2.68	4.47	4.16
Government	0.38	1.20	1.41
Div., Int. and Rent	5.71	5.16	4.37
Transfers	4.58	4.39	4.77
 Total Personal Income	 1.82	 2.66	 2.67

Source: Bureau of Economic Analysis, Table CA 5.

Table NC-4
Average Annual Growth Rates: Real Income
North Central Region, Kansas, United States
1985 - 1990

<u>Source</u>	<u>North Central Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	8.23%	8.37%	7.10%
Farm	-5.45	-1.89	5.30
Mining	-3.08	-7.60	-4.62
Construction	-2.80	-1.59	2.09
Manufacturing	0.26	0.81	0.76
Transport. & Utilities	-1.98	0.85	6.68
Wholesale Trade	2.00	1.40	3.44
Retail Trade	0.43	1.58	2.61
F.I.R.E.	2.82	2.71	4.87
Services	4.20	5.46	6.94
Government	4.46	2.41	3.25
Div. Int. & Rent	0.50	2.96	4.20
Transfers	2.86	3.22	3.54
 Total Personal Income	 0.87	 2.21	 3.54

Source: Bureau of Economic Analysis, Table CA 5.

growing faster than in the state, but that during 1985-1990, growth of personal income from manufacturing was nearly stagnant, reflecting a national trend. Finally, as Table NC-5 shows, agriculture (farming) and related activities have not been a major source of income for this region, contradicting the impression many people have of non-metropolitan Kansas. In fact, agriculture has been in a state of decline in the region. For comparison purposes, the proportions of personal income by sector for Kansas and the U.S. are shown in the Appendix in Tables NC-A2 and NC-A3, respectively.

The sectors in the region showing the greatest personal income growth include government (4.5 percent), services (4.2 percent), and mining (3.9 percent). It is difficult to imagine that long term growth in the region will be fueled by sustained increases in government, given the current political climate. Since mining (including oil exploration) is a minuscule part of total income, a large rate of growth in this sector will not have much effect on the region. Although the growth in personal income from services was large relative to other sectors in the region, it was below the 5.5 percent average rate of growth of personal income from services in the state, and the 6.9 percent average annual rate of growth in the nation.

Table NC-5
Proportion of Real Income by Source
North Central Region

	<u>1980</u>	<u>1985</u>	<u>1990</u>
Agricultural Services	0.4%	0.3%	0.4%
Farm	1.7	5.0	5.4
Mining	1.0	0.7	0.6
Construction	4.6	3.8	3.2
Manufacturing	10.6	9.0	8.8
Transportation & Utilities	6.2	5.0	4.2
Wholesale Trade	4.1	3.4	3.3
Retail Trade	7.2	6.1	5.7
F.I.R.E.	2.9	2.5	2.7
Services	10.9	11.1	12.8
Government	18.9	18.7	18.2
Div., Int., & Rent	17.0	20.1	20.0
Transfers	15.2	15.9	17.4

Source: Bureau of Economic Analysis, Table CA 5.

Employment

Just as in the case of income, employment in North Central Kansas has lagged behind the state. From 1969 to 1985, total employment in the region grew at an average annual rate of 1.2 percent, whereas from 1985 to 1990 it grew at an average annual rate of 0.9 percent. In contrast, during the same two time periods, the average rate of growth of employment for the state was to 2.1 percent and 1.8 percent, respectively. Basically, employment has been flat in the region, the most important sectors have been declining or stagnant, and there are few sectors experiencing significant growth.

As can be seen from Table NC-6, the sectors that experienced the greatest growth in recent years are the service sector and the finance, insurance and real estate sector. Farming, mining, construction, and transportation experienced declines in employment between 1985 and 1990. Growth in the service sector is important, since it is a major employer.

Table NC-6
Average Annual Growth Rates: Employment
North Central Region, Kansas, United States
1985 - 1990

<u>Source</u>	<u>North Central Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	4.18	4.36	4.17
Farm	-1.66	-1.77	-1.97
Mining	-2.56	-6.10	-4.73
Construction	-1.37	0.02	2.45
Manufacturing	0.97	1.30	0.26
Transport. & Utilities	-1.70	0.85	2.15
Wholesale Trade	2.48	1.00	1.93
Retail Trade	1.64	2.20	2.55
F.I.R.E.	1.25	1.61	2.15
Services	2.02	3.71	4.10
Government	1.18	2.42	1.85
Total Employment	0.94	1.77	2.26

Source: Bureau of Economic Analysis, Table CA 25.

As shown in Table NC-7, the sectors of the regional economy that provided the largest sources of employment in 1980 were government (26.5 percent), services (17.2 percent), farming (11.7 percent), manufacturing (9.9 percent), and retail trade (14.5 percent). Over the next ten years, farming's percent of total employment declined, services's percent of total employment increased, while government, manufacturing and retail trade remained a more or less constant

proportion of regional employment. Consistent with the findings from personal income, government employment plays a larger role in the region than it does in the rest of the state. Except for farming and government, the region's employment mix closely patterns the state (See Tables NC-A3 and NC-A4 in the Appendix) and the changes over recent years have been similar in the state and the region. Since both the farming and the government sectors play a larger role in the region than in the state, the decline in farming and the stagnation in government employment have led to nearly flat total employment growth in the region.

Table NC-7
Proportion of Employment by Industry
North Central Region

	<u>1980</u>	<u>1985</u>	<u>1990</u>
Agricultural Services	0.59%	0.70%	0.83%
Farm	11.67	10.70	9.26
Mining	1.40	1.57	1.30
Construction	4.37	4.51	4.22
Manufacturing	9.93	9.36	9.42
Transportation & Utilities	4.74	4.11	3.61
Wholesale Trade	3.97	3.75	3.88
Retail Trade	14.52	14.54	14.85
F.I.R.E.	4.64	4.95	5.03
Services	17.17	19.07	20.30
Government	26.50	26.00	26.50

Source: Bureau of Economic Analysis, Table CA 25.

Selected Counties in North Central Kansas

Table NC-8 shows employment and income growth rates for each county in North Central Kansas. Typically, counties with populations over 30,000 have experienced the greatest economic growth. Geary county is one exception. The population in Geary county is slightly over 30,000, but it has not experienced economic growth in recent years. Over 70 percent of employment in Geary county is accounted for by the government sector and most of that is attributable to Fort Riley. In fact, federal employment in the county is 63 percent of total employment; military employment alone accounts for more than one half of total employment. The reduction in military spending is reflected in the slowdown in Geary county.

Saline county is an exception in the region. It is the only county with a per capita income above that of the state; it has grown at consistently higher rates than the region in terms of both

Table NC-8
Average Annual Growth Rates
Employment and Real Personal Income
Counties of North Central Kansas

County	<u>Employment</u>		<u>Real Income</u>	
	1969 - 1985	1985 - 1990	1969 - 1985	1985 - 1990
Chase	-0.46	0.42	1.06	2.97
Clay	0.82	0.20	1.65	0.21
Cloud	0.07	1.14	1.40	-0.81
Dickinson	0.67	1.04	2.16	0.56
Ellsworth	-0.18	1.98	1.87	0.39
Geary	0.32	-1.13	-0.12	0.80
Jewell	-0.65	-1.63	-0.28	-2.20
Lincoln	-0.64	1.04	0.99	-1.50
Lyon	2.36	1.14	3.66	1.14
Marion	0.70	0.06	2.23	-0.09
Marshall	0.38	0.75	1.62	-0.07
McPherson	2.84	0.76	2.99	0.72
Mitchell	0.93	1.46	0.44	1.48
Morris	0.30	0.58	1.99	0.94
Ottawa	-0.04	-4.08	0.86	-2.58
Pottawatomie	4.20	1.79	4.31	0.79
Republic	-0.89	0.02	0.01	-1.52
Rice	1.16	-1.51	1.64	-1.35
Riley	2.49	3.26	1.76	1.78
Saline	2.29	2.22	3.12	2.80
Waubaussee	-0.05	-1.57	2.08	0.21
Washington	-0.27	0.20	0.54	-1.72

Source: Bureau of Economic Analysis, Tables CA 5 and CA 25.

employment and income. In Saline county, government accounts for a smaller share of economic activity, whereas the service, retail trade, and manufacturing sectors account for a greater share of economic activity than in the North Central Region.

Riley county has been one of the fastest growing counties in the region. Over the last five years real personal income has been growing at a rate of 1.8 percent and employment at 3.3 percent. The employment composition in Riley county has remained fairly stable over the years. It differs from the rest of the region in that 36 percent of employment is accounted for by the government sector, 32 percent by state and local government alone. This reflects, in large part, Kansas State University. For Lyon county, which grew steadily before 1980, and more slowly since, the major source of employment is the manufacturing sector, which accounts for 21 percent

of total employment, a much higher proportion than for the region. The counties that have been declining tend to be small in terms of population, usually less than 6,000 (Rice county is the exception), and agriculture represents a larger proportion of employment in these counties.

Outlook

Although in recent times North Central Kansas has grown more slowly than the state, it seems to follow the general pattern of the state. When income and employment are rising in the state, they usually increase in the region as well, although often at a slower rate. When the state economy changes direction, the region commonly follows. As with much of Kansas, though, the region does not experience the deep troughs of a recession nor the extended peaks of an economic expansion. Rather, the region experiences slower growth with less volatility over time. This trend can be seen in the last few years. Whereas there have been large increases in unemployment rates in many industrialized areas of the country, the unemployment rate in the region has remained constant. Although the region hasn't suffered the throes of the most recent recession, there does not appear to be much reason to hope for robust economic growth. The region is largely dependent on government - either in the form of transfer payments or direct government spending, and there does not seem to be any reason to expect this source of income and employment to increase greatly. It is already policy to scale back military at Ft. Riley, and many army reserve and national guard units are undergoing cutbacks. Furthermore, since a good part of personal income is from dividends and interest, as long as interest rates remain low it will be even more difficult for income levels to grow.

Forecasts for regional employment and income series were generated using ARMA models and the results are reported in Tables NC-9 and NC-10. Total real personal income and total employment are projected to grow at 0.3 percent and 0.6 percent, respectively, in 1993 - basically no growth. Among the sectors, employment in agriculture, construction, government, retail trade, and wholesale trade are projected to decline. The service sector is projected to be the fastest growing at 2.1 percent.

Forecasts for the income series predict declines in real income for agricultural services, FIRE, government, and wholesale trade. The service sector is predicted to grow along with transportation. Changes in several factors could alter the direction of change for the regional economy. Higher oil prices, higher agricultural prices, and higher interest rates would help to turn things in an upward direction. Because these factors involve much uncertainty, any

significant long term growth in the region is likely only if the income and employment structure of the region shifts to include more industries with potential for very rapid growth.

Table NC-9
1993 Employment Forecast
North Central Region

<u>Source</u>	<u>Percent Change</u>
Agricultural Services	-1.96%
Farm	-0.96
Mining	0.44
Construction	-0.08
Manufacturing	0.28
Transport. & Utilities	1.00
Wholesale Trade	-0.34
Retail Trade	-0.25
F.I.R.E.	1.70
Services	2.10
Government	-1.35
Total Employment	0.58

Table NC-10
1993 Real Income Forecast
North Central Region

<u>Source</u>	<u>Percent Change</u>
Agricultural Services	-0.47%
Farm	2.13
Mining	1.80
Construction	0.01
Manufacturing	0.56
Transport. & Utilities	1.94
Wholesale Trade	-0.34
Retail Trade	0.06
F.I.R.E.	-0.40
Services	4.50
Government	-0.40
Total Income	0.29

NOTES

1. Data sources: Nominal income and employment from U.S. Department of Commerce, Bureau of Economic Analysis. Income data have been deflated using GDP deflator. Some data on education, income distribution, and age distributions were from the 1990 census.
2. The ARMA model for real personal income is:

$$\begin{array}{rcll} \text{Real Income} = & 2438395.4 & = & -.26568 \text{ (MA)} + .91297 \text{ (AR)} \\ (t) & (8.62) & (-1.141) & (17.81) \end{array}$$

$$R^2 = .95 \qquad F = 162$$

3. The ARMA model for employment is:

$$\begin{array}{rcll} \text{Total Employment} = & 247209 & + & .03534 \text{ (MA)} + .97087 \text{ (AR)} \\ (t) & (2.7) & (.147) & (22.39) \end{array}$$

$$R^2 = .96 \qquad F = 255.96$$

Appendix NC

Table NC-A1
Per Capita Income and Population

<u>County</u>	<u>Per Capita Income 1989</u>	<u>Percent of Kansas PCPI</u>	<u>Population 1989</u>
Chase	\$17,768	98%	3,021
Clay	15,596	86	9,158
Cloud	15,970	88	11,023
Dickinson	16,334	90	13,950
Ellsworth	15,211	84	6,586
Geary	12,161	67	30,453
Jewell	16,565	91	4,251
Lincoln	16,395	91	3,653
Lyon	15,000	83	34,732
McPherson	17,443	96	27,268
Marion	14,833	82	12,888
Marshall	16,608	92	11,705
Mitchell	17,539	97	7,203
Morris	14,558	80	6,198
Ottawa	14,653	81	5,634
Pottowatomie	14,476	80	16,123
Republic	16,183	89	6,482
Rice	16,522	91	10,610
Riley	13,108	72	67,139
Saline	19,002	105	49,301
Wabaunsee	15,307	85	6,603
Washington	14,693	81	7,073
 Region	 \$15,446	 85	 355,700
 Kansas	 \$18,104		 2,480,400

Source: Bureau of the Census, 1990 Census of Population and Housing.

Table NC-A2
Proportion of Real Income by Source
Kansas

	<u>1980</u>	<u>1985</u>	<u>1990</u>
Agricultural Services	0.4%	0.3%	0.40%
Farm	1.4	3.9	3.80
Mining	1.7	1.6	0.90
Construction	5.3	4.2	3.60
Manufacturing	16.0	13.8	12.90
Transportation & Utilities	6.7	6.2	5.80
Wholesale Trade	5.6	5.1	4.90
Retail Trade	7.4	6.7	6.50
F.I.R.E.	3.6	3.7	3.80
Services	12.5	13.3	15.70
Government	11.6	11.9	12.12
Div., Int., & Rent	16.1	19.1	19.30
Transfers	13.3	13.9	14.60

Source: Bureau of Economic Analysis, Table CA 5.

Table NC-A3
Proportion of Real Income by Source
United States

	<u>1980</u>	<u>1985</u>	<u>1990</u>
Agricultural Services	0.4%	0.4%	0.5%
Farm	1.3	1.2	1.3
Mining	1.6	1.3	0.8
Construction	5.2	4.9	4.5
Manufacturing	19.1	16.7	14.5
Transportation & Utilities	5.9	5.4	5.0
Wholesale Trade	5.3	5.0	4.9
Retail Trade	7.7	7.4	7.0
F.I.R.E.	4.5	4.9	5.4
Services	14.5	16.9	20.1
Government	12.2	12.1	12.0
Div., Int., & Rent	15.3	17.9	18.3
Transfers	15.1	15.5	15.7

Source: Bureau of Economic Analysis, Table CA 5.

Table NC-A4
Average Annual Growth Rates: Employment
North Central Region, Kansas, United States
1969 - 1985

	<u>North Central Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	-1.59%	0.18%	5.04%
Farm	-1.05	-0.46	-0.72
Mining	5.06	7.17	4.77
Construction	1.51	2.22	2.02
Manufacturing	3.87	1.73	0.05
Transport. & Utilities	1.07	1.90	1.37
Wholesale Trade	4.77	4.57	2.68
Retail Trade	0.69	1.60	2.51
F.I.R.E.	2.88	4.30	4.05
Services	2.86	3.77	3.90
Government	0.04	0.73	1.00
Total Employment	1.22	2.12	2.04

Source: Bureau of Economic Analysis, Table CA 25.

Table NC-A5
Proportion of Employment by Industry
Kansas

	<u>1980</u>	<u>1985</u>	<u>1990</u>
Agricultural Services	0.6%	0.7%	0.8%
Farm	7.9	7.0	5.7
Mining	2.2	2.8	2.2
Construction	5.1	4.8	4.6
Manufacturing	15.2	13.2	12.9
Transportation & Utilities	5.7	5.5	5.0
Wholesale Trade	5.3	5.2	5.0
Retail Trade	15.4	15.6	15.8
F.I.R.E.	6.0	6.6	6.6
Services	18.9	21.2	23.5
Government	17.7	17.5	18.2

Source: Bureau of Economic Analysis, Table CA 25.

Table NC-A6
Proportion of Employment by Industry
United States

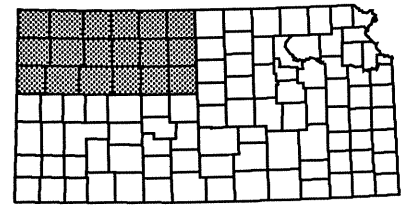
	<u>1980</u>	<u>1985</u>	<u>1990</u>
Agricultural Services	0.7%	0.9%	1.0%
Farm	3.4	2.8	2.3
Mining	1.1	1.0	1.0
Construction	5.0	5.2	5.3
Manufacturing	18.5	16.1	14.4
Transportation & Utilities	5.0	4.8	4.8
Wholesale Trade	5.1	4.9	4.8
Retail Trade	15.9	16.4	16.6
F.I.R.E.	6.7	7.4	7.4
Services	21.7	24.9	27.4
Government	16.7	15.7	15.4

Source: Bureau of Economic Analysis, Table CA 25.

Northwest Kansas

by

Ralph Gamble



Foreword

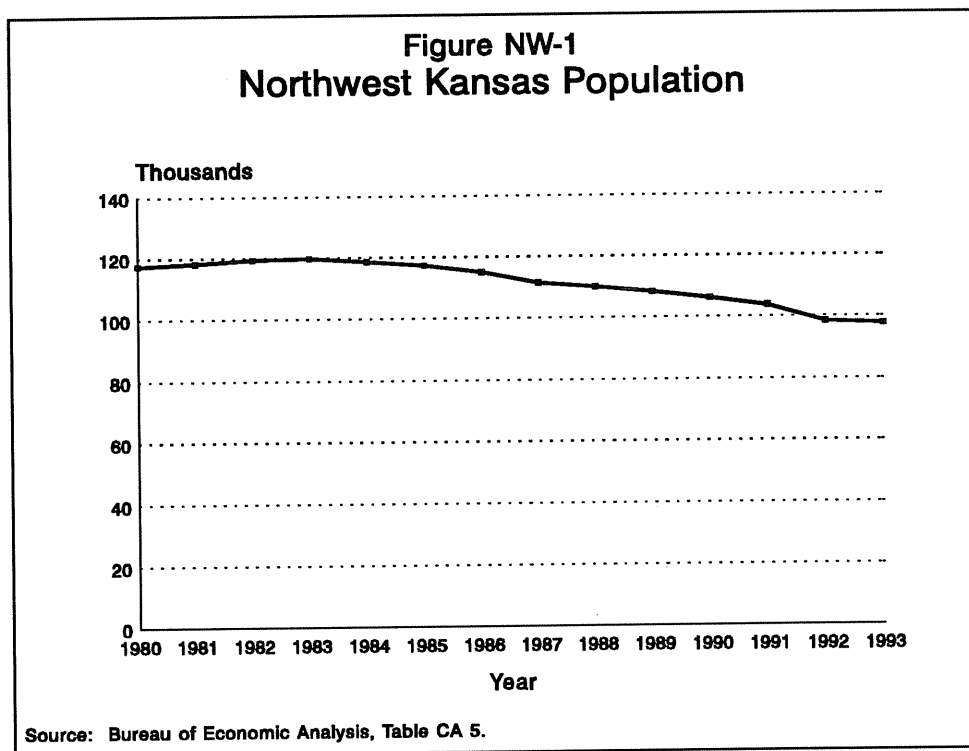
The 1980s was a decade of decline or at best stagnation for the Northwestern Kansas. The eighteen counties that make up the northwest region (Cheyenne, Decatur, Ellis, Gove, Graham, Logan, Norton, Osborne, Phillips, Rawlins, Rooks, Russell, Sheridan, Sherman, Smith, Thomas, Trego, Wallace) have economies driven mostly by agriculture and oil and gas production. The slump in the oil and gas industry and stagnation in agricultural sector made the decline during last half of the decade especially severe. The region's hardships have resulted in a declining and aging population, falling employment levels, and low wages and salaries. Industries other than agriculture and mining have shown some growth, but not enough to halt the region's decline. Legislation creating new incentives for oil and gas production and an apparently rebounding manufacturing sector should help create growth in the next few years, but significant challenges remain if Northwest Kansas is to become competitive in the long term future.

As in most of the nation, the prevailing mood in Kansas in 1992 was one of uncertainty, even though the year's recession itself was comparatively mild. The uncertainty may be the result of the recent rapid restructuring of the economies of the nation, indeed of the world; Northwest Kansas was not exempt. Having seen the fortunes of the region and the world change so quickly, people were fearful that the same could happen to them. The world came to be viewed as an island of instability. Although pundits point out that people want change, perhaps the change that they desire most is a respite; a period of stability in which the world can catch its breath and ponder the tremendous changes that have so recently occurred.

Population

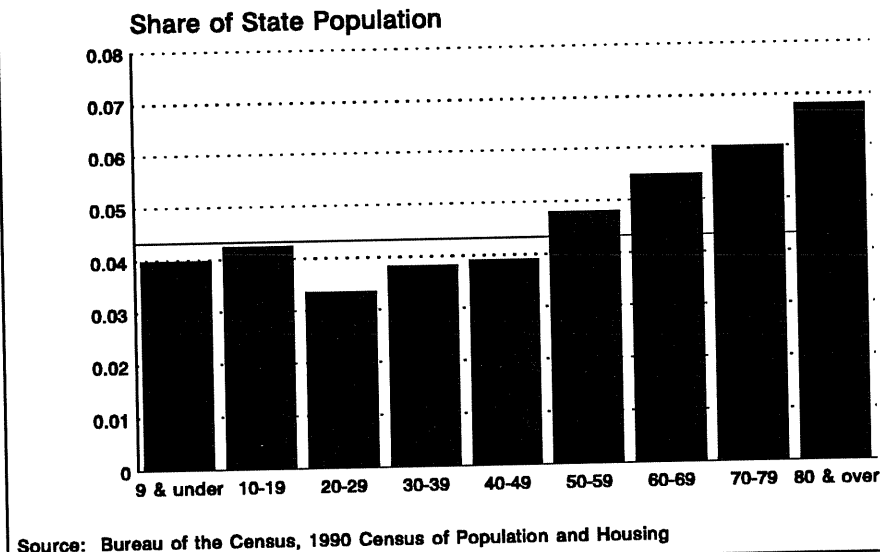
The changing fortunes of Northwest Kansas may be caused by its declining population, or the declining population may be a result of the changing fortunes of the region in comparison to nearby regions. In any event, during the recent past, population declined at a smaller rate than in previous years (See Figure NW-1). In 1980 population in northwest Kansas was 117,400 persons. For the first three years of the decade population grew in response to the oil boom in

the region and the resulting influx of employees in the industry. But after 1984, population in the region began to decline. We estimate that by 1992 population had dropped to 98,400 persons; by 1993 population in northwest Kansas is predicted to drop to 97,700 persons.



By 1990, northwest Kansas population had declined to 106,100 persons, which brought the region's share of state population to 4.3 percent. Figure NW-2 indicates the distribution of ages in the region as a ratio of the total number of persons in the state of the same age. An age distribution that is the same as the state's would be represented by a chart in which all the columns reached the .043 level (represented by the solid line in the figure); this does not happen in Figure NW-2. There are fewer-than-proportionate numbers of very young and young adults, with the lowest cohort being that of 20-29 year-olds. There is also a larger-than-proportionate number of older persons; their share of the region's population is more than one and a half times their share in the state. This indicates that the population of Northwest Kansas tends to be lacking in those age groups where families are formed and reared, where productivity increases are most rapid and where multiplier effects are greatest. Instead, it has an abundance of elderly citizens, many of whom require large amounts of medical and nursing care. This distribution points to long term impediments to income growth in the region.

Figure NW-2
Regional Shares of State Population, by Age
Northwest Kansas



Income

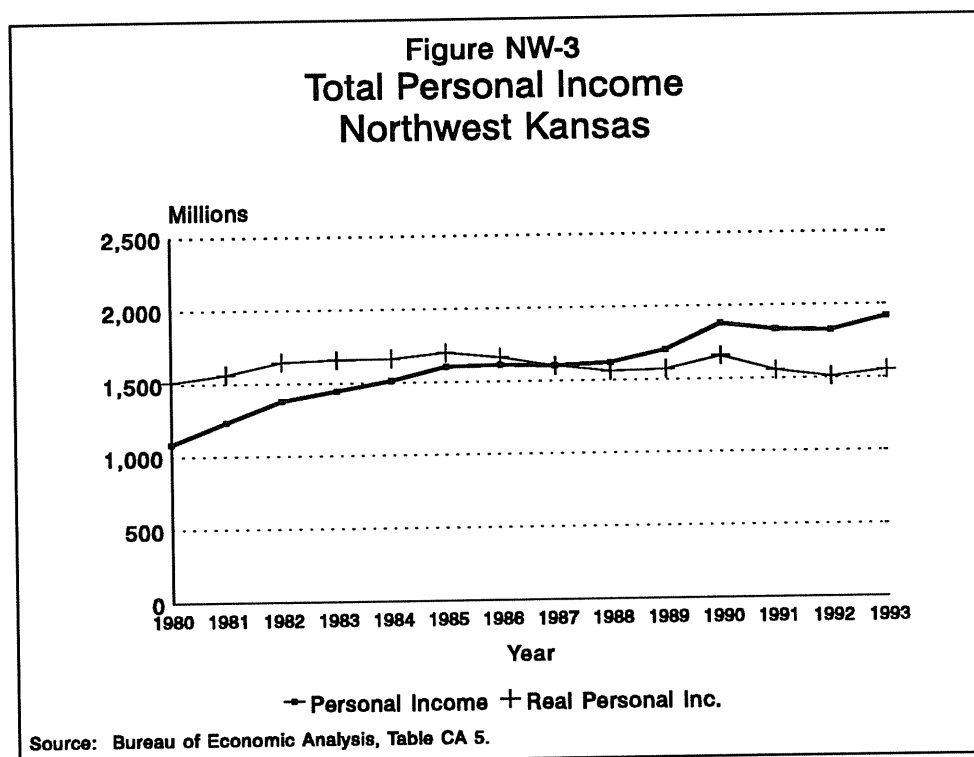
Although data are not yet available, we expect that in 1992 total (nominal) personal income in northwest Kansas was approximately \$1,825 million. This is a small but nevertheless real decrease from the previous two years. As can be seen from Figure NW-3, the general trend of total personal income in the region shows rather large increases in the first half of the 1980s, followed by a dramatic leveling due to the oil price collapse in the latter part of the decade. The figure also shows real personal income (in 1987 dollars)¹, revealing that if regional income is adjusted for inflation, personal income actually declined after 1985. In 1989 and 1990 total personal income grew at a quite rapid rate in the region, only to fall again with the recession of 1991-92. Our prediction for 1993 is for total (nominal) personal income to grow to a value of \$1,918,000, mostly because of transfer payments.

Most of the increase in income between 1980 and 1990 is due to nonfarm personal income. By 1993 we predict that by far the biggest portion of (nominal) personal income, \$1,640 million of the \$1,918 million, will be due to nonfarm personal income. Farm income will make up the remainder at approximately \$278 million. As a percentage of total personal income, farm income

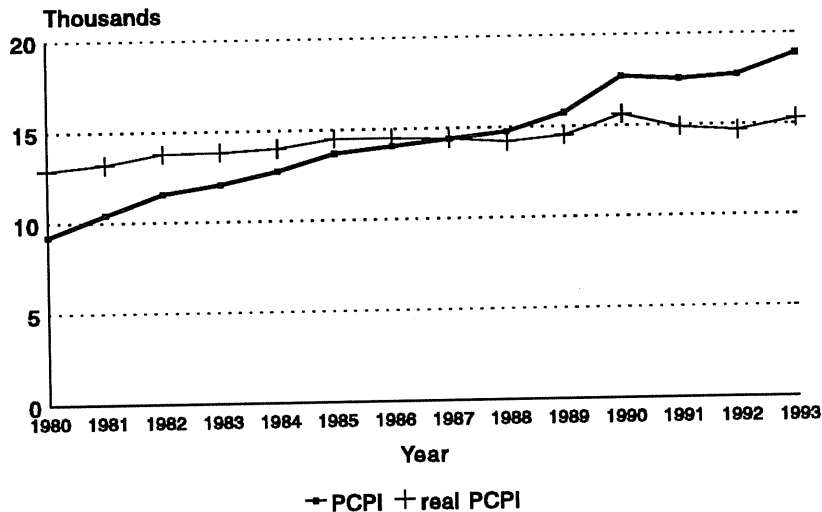
¹ Adjusted for inflation using Gross Domestic Product Price Deflator, 1987 base year.

has varied from a low of approximately 8 percent to a high of about 17 percent in 1986. Over the decade of the 1980s the percentage of total personal income accounted for by farm income in northwest Kansas increased overall. However, in the first three years of the 1990s we estimate that the percentage of total personal income accounted for by farm income will have fallen from approximately 16 percent to about 14 percent. This decrease will still leave the share higher than the 8 percent at which farm income began the decade of the 1980s.

Due to the recession, the declining jobs base, the collapse of oil prices following the Gulf War, and the loss of wholesale and retail trade growth with the declining population, per capita income in northwest Kansas failed to grow significantly in 1992. In 1991 the estimated value was \$17,530 per person; in 1992 it was \$17,741 per person. Since that is unadjusted for inflation, it represents a real decline in per capita income (See Figure NW-4). In 1993 and the end of the recession, our forecast is for per capita income in northwest Kansas to grow by over \$1,000 per person to \$18,886.



**Figure NW-4
Per Capita Personal Income
Northwest Kansas**



Source: Bureau of Economic Analysis, Table CA 5

Virtually the only (nominal) income series showing no declines during the 1980s or early 1990s is transfer payments. A probable reason is the aging of the population of Northwest Kansas resulting from younger age cohorts leaving the region in pursuit of employment opportunities. In 1980 transfer payments in the region were \$157 million. Growth occurred throughout the 1980s and is predicted to continue in 1993. In 1992 transfer payments totalled \$359 million in Northwest Kansas. Our forecast for 1993 is for transfer payments to rise to \$373 million. Transfer payments continue to grow in importance in Northwest Kansas. For example, in 1980, transfer payments were about one-third of the value of wages and salaries in the region. Between 1986 and 1987 transfer payments for the first time exceeded one-half of the value of wages and salaries, as transfers continued to grow while wages and salaries stagnated in the 1987 regional recession. We expect that by 1993 transfer payments will be 60 percent of the value of wages and salaries.

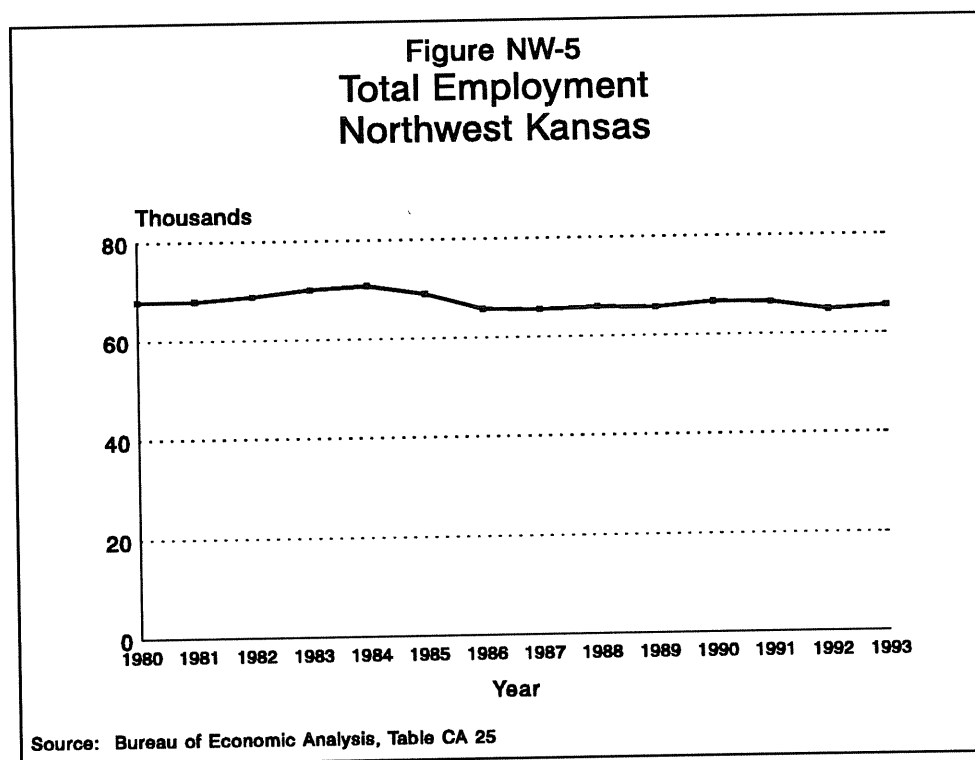
As in most regions of the state (and the nation for that matter) services are an important part of the economy of Northwest Kansas and continue to grow. The only year in which services stagnated was in 1987 -- a year worse than the 1992 recession for citizens of northwest Kansas in many respects. In 1987 services generated \$171 million of (nominal) earnings in the region. In 1988, which ended the regional mini-recession, services had grown by some 5 percent. By

1992 we estimate service employment generated \$227 million of income. Our 1993 projection is for services to generate \$243 million of earnings for northwest Kansas.

The other major income-generating category is government, 98 percent of which is on the state and local level. We estimate that in 1992 state and local government employment will have generated \$177 million of (nominal) income, and our projection for 1993 is for the value to grow to \$187 million.

Employment

Total employment during the 1980s peaked in Northwest Kansas in 1984 when almost 71,000 persons were employed. As illustrated in Figure 5, the trend since then has definitely been downward with a low occurring in 1987. 1988 and 1989 were mild recovery years. The



recent peak occurred in 1990 when almost 67,000 persons were employed in the region. The actual value for total employment in 1992 is unknown, but if the region mirrors the rest of the state, the value should be a slightly less than 65,000 persons. We expect recovery in 1993. In fact, we expect that it has already started in the latter half of 1992 in the employment series. Our forecast for 1993 is between 65,000 and 66,000 persons employed.

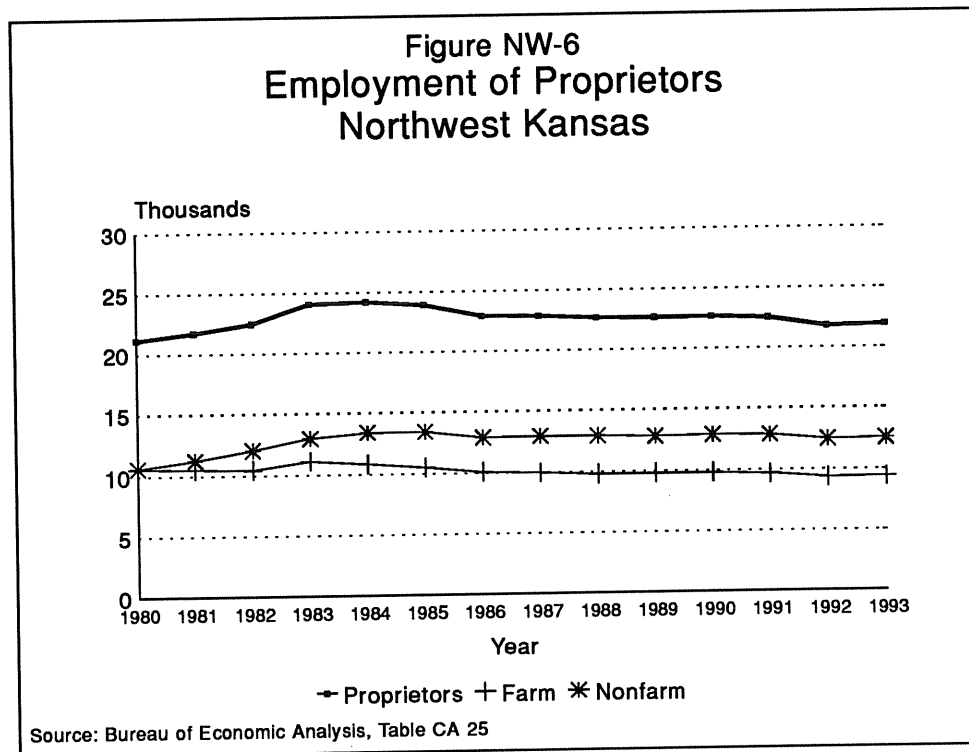


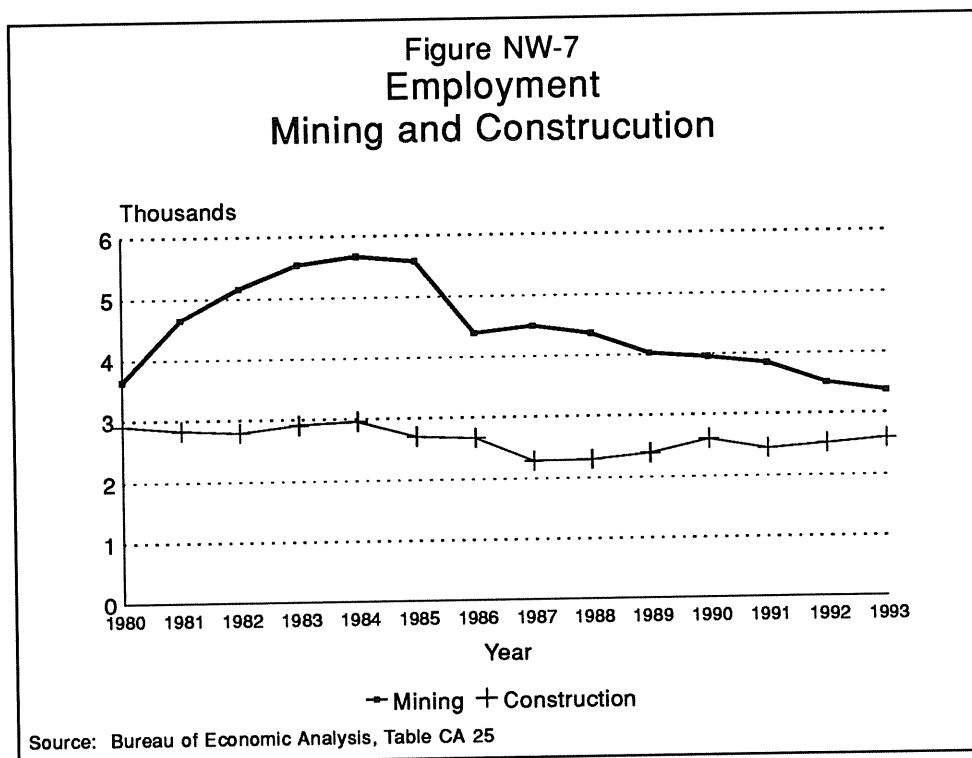
Figure 6 shows employment of farm and non-farm proprietors. The number of farm proprietors continues to drop from the peak year of 1983. However the rate of decline has slowed somewhat. In 1983 there were over 11,000 farm operators in the Northwest Kansas region. By 1990 the figure had fallen to 9,800, a decrease of 13 percent. The rate of decrease has slowed dramatically, and there was even a very slight increase in 1989. For the period immediately ahead, the fact that the local trend has stabilized leads us to forecast a slight increase in the number of farm proprietors for 1993 to approximately 9,400. Long-term, however, the trend is definitely downward. As farms get larger in size, fewer farm operators are required.

The number of nonfarm proprietors has held amazingly steady since 1986 at just under 13,000 persons. This was a decrease from 1985 of approximately 500 proprietors. 1986 was not a kind year for Northwest Kansas, but the number of operators and businesses excluding farms has stayed fairly constant at around 12,800. We estimate that 1992 has seen a decrease, although it will be a year or more before the actual numbers are available. Our forecast for 1993 is for an increase in the number of nonfarm proprietors to a level of 12,500.

Just as with farm proprietors, consolidation has lowered the number of persons employed on farms in northwest Kansas. The long-term and short-term trends are both downward. In

1983, 14,500 persons were employed in the farm industry. By 1990 the figure had fallen to 12,000. We expect that by 1993 farm industry employment will be approximately 11,200.

The 1980s, at least the latter part, were not kind to the mining industry in Northwest Kansas. The trend for mining employment has been downward, falling from a high of almost 6,000 persons in 1984 to just under 4,000 persons in 1990 (See Figure 7). The impact on the economy of Northwest Kansas is more severe than these small numbers would indicate. This is because the oil industry impacts other industries such as oil services. Trends in the extraction and service industries impact a wide range of other businesses running the whole gamut of employment -- from hotels and restaurants to retail sales and legal services. The trend for mining employment is downward and that does not bode well for Northwest Kansas. It is worth noting that most of the decline occurred in a single year, 1986. In 1986 mining employment fell to about 4,000 persons. By 1990 it had slipped only slightly, to just below 4,000 persons, indicating that the local trend in the latter half of the 1980s was much flatter than it was in the first part of the 1980s. If the local trend continues, by the end of 1993 mining employment should drop slightly to around 3,300.



But we are actually more optimistic than that. Crude oil prices may be under some pressure from both returning Iraqi production in 1993 and the results of increased exploration and

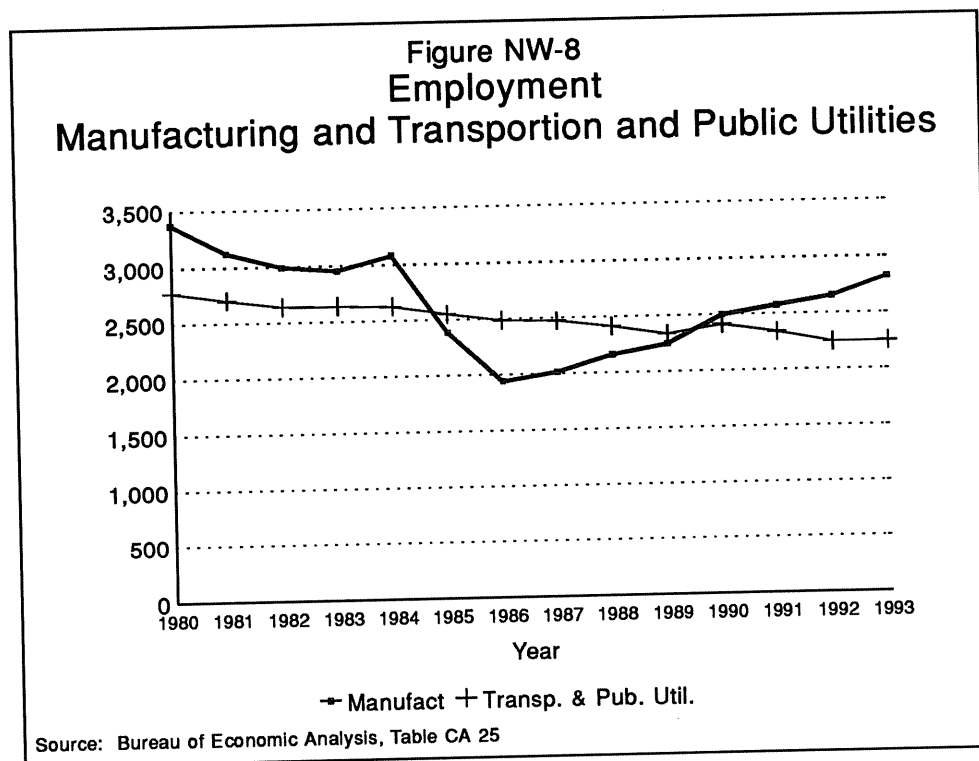
efficiency of production in the former Soviet Union. However, the new energy strategy act passed by Congress and signed by the President in 1992 should produce powerful incentives for exploration and production in Northwest Kansas very quickly, given the available stock of idle rigs to draw on and the ability of the industry to mobilize resources rapidly. If so, mining employment should rebound in Northwest Kansas in 1993 and throughout the first half of the 1990s. Since mining employment is a driving force for the northwest Kansas economy, it could lead to a period of regional recovery through 1995.

The construction industry also looks brighter in Northwest Kansas, at least in the period since 1988 (See Figure 7). Between 1984 and 1987 construction employment fell by some 20 percent. But after 1987, it began to recover. By 1990 employment in the construction industry had increased to approximately 2,600 persons -- a 13 percent increase since 1987. We expect that construction employment fell in 1991, but that 1992 growth more than made up for the loss of the previous year. We also expect that in 1993 the recovery will continue, largely because the glut of unsold residential buildings has been reduced. In addition, population shifts within the region should continue to lead to demand for new construction, even though vacancy rates and residential overhang may remain in other (depleted) areas.

Perhaps the brightest outlook for employment in Northwest Kansas is in the manufacturing sector. Manufacturing employment has rebounded from a 40 percent drop between 1984 and 1986, as seen in Figure 8. Between 1986 and 1990, it grew 31 percent. Most of the earlier decrease was due to the loss of a major industrial employer in northwest Kansas, Baxter-Travenol Labs in Hays.

The recovery in manufacturing employment has been slow but steady. The 1,000 jobs lost from the exodus of Baxter-Travenol have been partially replaced by jobs in a much more diverse manufacturing base. The recovery has come from smaller manufacturing enterprises in the region. This has not only led to more stable growth, but should also help lessen the impacts of future recessions by distributing them within a diverse manufacturing base. However, there is a down side to this new stability. The lost jobs generally paid higher wages than their replacements.

For 1993 we forecast further growth. Employment in the manufacturing industry in Northwest Kansas should increase to approximately 2,850 persons.

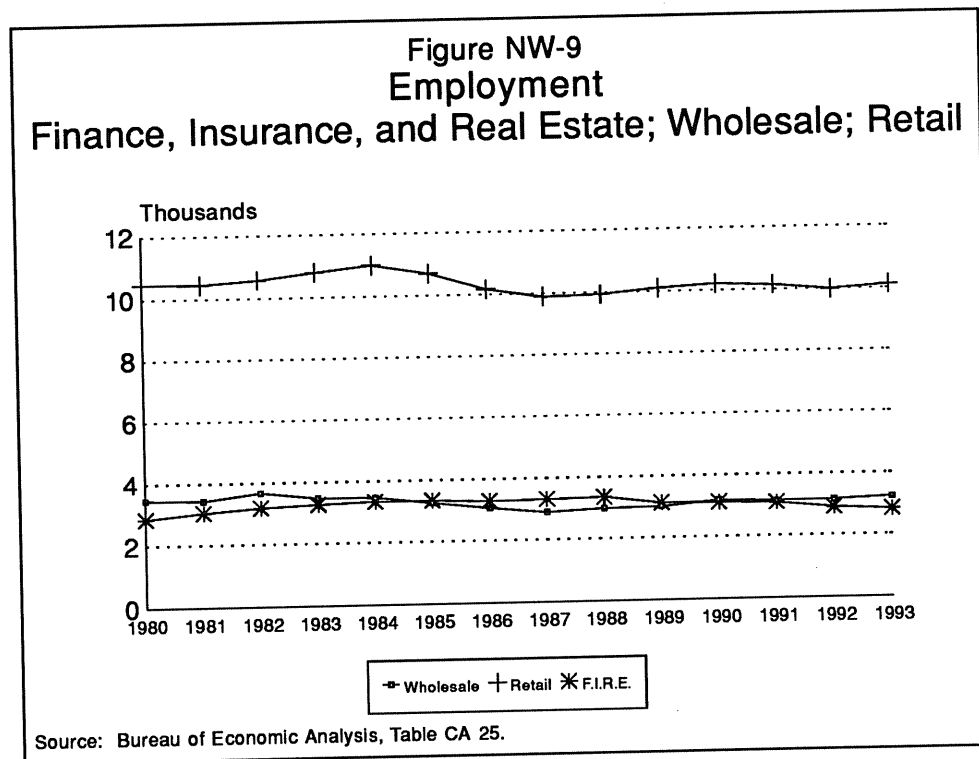


Transportation and public utility employment is closely related to the mining employment time series in Northwest Kansas for two reasons. First, trucking activity depends on transportation of crude oil, rigs, and supplies to and from the fields. Second, a large portion of public utility energy production (electricity) is related to pumping activity in the oil fields. Thus, it is not surprising that transportation and public utility employment has decreased in Northwest Kansas, especially since 1984 (See Figure 8). The bottom seems to have been reached and 1990 actually showed an increase of some 4 percent.

Our forecast therefore is for stable employment in the transportation and public utility sector. In 1993 we forecast approximately 2,250 persons in this industry.

The bottom seems to have been reached in the wholesale trade employment sector as well. Wholesale trade employment increased every year between the regional recession of 1987 and 1990. It is forecast to remain stable through 1991 and 1992 with a slight increase in 1993. By the end of 1993, total employment in wholesale trade should exceed 3,200 persons.

The long-term outlook is less hopeful. As more and more industries find it economical to install computerized ordering, inventorying, and financing equipment at point of sale, fewer and fewer layers of wholesaling become necessary. This is one case where the increasing fiber opticization of the western half of the state might lead to a loss of jobs in some sectors -- a case



of infrastructure costing jobs. It is an article of faith that the increasing communications capability of the region will lead to a net increase in jobs that will be more highly paid than the ones they replace. However, one can foresee a Darwinian impact on certain industries. Without question, wholesale trade is one of these. Although our forecast for Northwest Kansas in 1993 predicts a very slight increase in wholesale trade employment to 3,200 persons, the long-term outlook is one of contraction.

The same innovation will impact the finance, insurance, and real estate sectors, although less severely in the case of real estate. It is expected that the decreasing cost of information flows and the increasing capacity to carry data interactively between Northwest Kansas and the rest of the world will lead to lower employment opportunities in the finance industry, banking, and insurance. The contraction in these industries may have already begun. Figure NW-9 below shows that the peak year was 1988, when some 3,340 persons were employed in the industry. In 1989 the numbers fell by some 7 percent. In 1990 the numbers stayed about the same as the previous year, indicating that the trend may be ending. If the trend reasserts itself (we believe it unlikely), employment in this sector will decline further. For 1993 we forecast the numbers to fall to approximately 2,850 persons in the finance, insurance, and real estate sector.

Since 1987 retail trade employment has stayed fairly stable; the data show only slight growth. By 1990 the numbers had increased to 10,250 persons, up 4 percent from 1987. This is a large sector for employment in Northwest Kansas, and is especially important because it provides first-time work for many of the region's younger, less trained, inexperienced workers. Although the jobs in general offer lower wages than other sectors and are often dismissed as dead-end jobs, they are important for their social spillover benefits since they provide entry level jobs. They also provide some training in addition to the (often low) earnings paid to first time workers. The benefits of training and job experience they provide are carried as young people move out of the retail trade sector into lifetime careers. In other words, they not only provide income, but also build human capital. Therefore what happens in this sector is important for the region. Here again, this sector is driven largely by occurrences in the much smaller mining employment category. The mining slump of 1985 was felt in the retail trade category almost immediately.

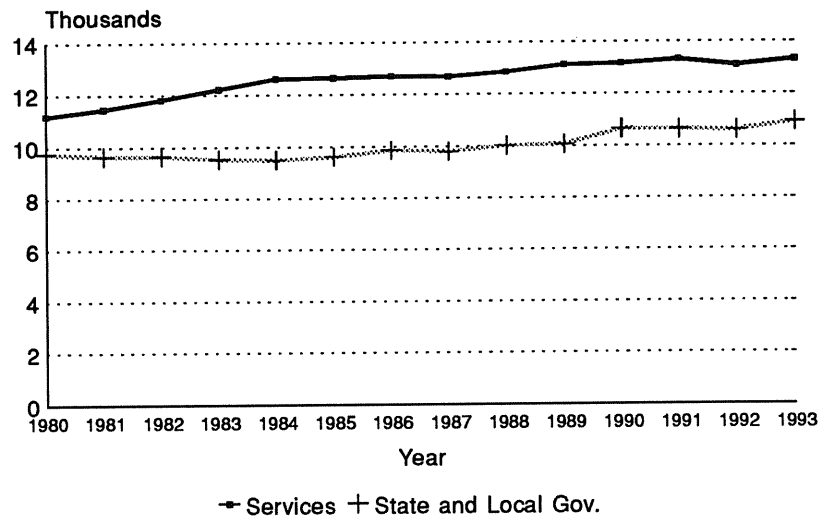
Because of its importance, we are encouraged by the growth in this sector in 1989 and 1990 and expect further growth to occur in 1993. Our forecast is for approximately 10,200 persons to be employed in this sector in 1993. This would be a slight increase over the 1992 recession year.

The two remaining sectors, services and state and local government, have shown increasing employment in every year (See Figure 10). Contrary to popular opinion and political bombast, service sector employment is not composed solely of the low wage hamburger-flipping variety. It includes employees such as lawyers, draftsmen, graphic artists, and various types of consultants.

To some extent the growth of service employment mirrors the national movement to a post-industrial information based society. It is encouraging that while Northwest Kansas has been losing population, the region still shows increases in service employment. The end of the oil boom in 1984 in Northwest Kansas slowed service sector employment growth but did not eliminate it, as was the case in other industries. In 1985, 1986 and 1987 growth was very slow, but in 1988, 1989, and 1990 growth reasserted itself to levels near those that occurred before the 1984 oil bust.

In the near future it will be possible for graphic artists working in a renovated barn on the outskirts of Goodland, or financial engineers at home in Ellis to serve clients as far away as

**Figure NW-10
Employment
Services and State and Local Government**



Source: Bureau of Economic Analysis, Table CA 25

Brussels or Beijing, through high-density digital interfaces linked by satellite. This may be one reason that service sector employment has grown faster than population in Northwest Kansas, and it may bode well for the future as the region and the state continue to digitize and extend the information network. However, the increase in service sector employment also reflects to some extent the aging of the population remaining in Northwest Kansas. An older population requires more health services, which accounts for part of the increase in service sector employment. This shows that less positive influences are also at work.

The remaining category, state and local government employment, is quite important in the economy of Northwest Kansas. By 1990 only services and the farm industry employed more people than this sector. Some 10,600 persons owe their livelihood to state and local government employment. The trend has been upward since 1985, decreasing only slightly in the regional recession year of 1987. Although cutbacks are widely talked about and somewhat expected, we believe the 1990s will be a decade of improvement and enhancement of education and health care, both of which will lead to more state and local government employment for Northwest Kansas. The forecast for 1993 is for almost 11,000 persons to be employed in this sector. That is a growth of some 400 persons -- about 4 percent above the current level.

Long Term Outlook

The long term performance for Northwest Kansas will be determined by the strength of key industries within the sector. The industries important for long term growth are those with the largest employment and those with the most potential to create employment in other sectors. An examination of such key industries within the region provides insight into the region's future.

The sectors with the five largest employment totals for Northwest Kansas are agriculture, government, services, retail trade, and mining. Future employment growth within the region will be heavily represented in these sectors. Not all of these sectors are able to create jobs independently, however. Although there are many jobs in government and retail trade, they seem to be created by factors other than competitiveness in production. Factors such as population and general regional economic performance are more important factors. Agriculture and mining, however, gain employment more from the ability to compete with similar industries in other regions. The fact that employment has remained fairly steady or even grown as regional population has contracted illustrates the importance of these industries for local employment. The service sector may also have some potential for generating employment through competitiveness, but it also clearly depends on other industries for much of its growth.

The outlook for mining and agriculture will significantly effect the outlook for the regional economy as a whole. Agriculture employment has been slowly decreasing in recent years due to consolidation. Northwest Kansas should remain competitive in agriculture, but the number of farm employees will likely continue to drop. It does not appear that agriculture will serve as a source of growth for the region. Mining, on the other hand, is more likely to grow. New incentives from national legislation should increase oil and gas exploration, stimulating employment in mining and the industries that support and supply it. Another sector that has exhibited a very positive trend is manufacturing. Since 1986, manufacturing employment has grown steadily, indicating that the region is becoming more competitive in manufacturing. Manufacturing employment is still relatively small sector, but if it can become increasingly competitive, it will be an important source of growth.

The service sector has also grown significantly as population has diminished. Much of this growth has come from the demand for health services of an aging population. This is not likely to create much sustainable, long term regional growth.

Thus, the industries most likely to create long-term growth are agriculture, mining, and manufacturing. The outlook for mining is positive, but agriculture does not appear likely to grow. Long term growth, however, will probably have to come from competitiveness in sectors that have traditionally been small in Northwest Kansas such as manufacturing. If manufacturing can continue to grow and become a major force in Northwest Kansas, the long-term future can be positive for the region.

Counties of Northwest Kansas

Looking at growth rates of real personal income and total employment for individual counties within the Northwest region reveals that the general stagnation of the region was distributed fairly evenly among the counties. Employment growth during the 1980s, shown

Table NW-1
Counties of Northwest Kansas
Total Employment Growth

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1985-1990</u>
Cheyenne	9.6	-8.5	-4.5
Decatur	12.1	-7.2	-2.8
Ellis	57.5	10.5	-0.8
Gove	14.1	-2.0	0.5
Graham	14.6	-0.9	-9.3
Logan	11.6	-10.1	-2.8
Norton	3.6	-2.1	-0.9
Osborne	-4.0	-8.7	-0.4
Phillips	12.0	-5.8	-3.1
Rawlins	7.4	-7.3	-1.9
Rooks	4.1	-7.5	-9.9
Russel	23.5	-2.7	-10.7
Sheridan	18.3	-9.6	-3.8
Sherman	22.2	-13.0	-7.2
Smith	1.8	-3.4	0.6
Thomas	27.4	3.9	0.8
Trego	-0.9	-3.5	-4.4
Wallace	1.7	-9.6	0.6

Source: Bureau of Economic Analysis, Table CA 25.

Table NW-1, was negative for all but two of the counties. Looking at the 1985-1990 growth rates reveals that several counties suffered much of their decline in the later half of the decade. Only four counties exhibited positive employment growth during the last half of the decade and none had a growth rate above one percent.

Real personal income growth (See Table NW-2) exhibited more variability among the counties. During the 1980s, some counties experienced fairly high rates of real income growth while others had small or even negative growth rates. Looking at the growth rates for the 1985-90 period, however, reveals that for almost every county in the region, very little of the growth during the 1980s came in the later half of the decade. Many counties that had high income growth for the 1980-90 period had small or even negative growth after 1985 (Gove county is the only exception). This region-wide decline in real income is largely attributable to the decline in oil prices.

Table NW-2
Counties of Northwest Kansas
Real Personal Income Growth

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1985-1990</u>
Cheyenne	1.8	18.7	-0.8
Decatur	70.2	41.0	6.6
Ellis	73.1	16.0	4.4
Gove	-7.0	29.6	17.7
Graham	1.2	8.8	-6.3
Logan	18.3	-11.0	-14.3
Norton	14.2	12.4	0.7
Osborne	14.8	2.3	0.4
Phillips	30.1	-4.2	-0.2
Rawlins	1.1	26.9	-0.5
Rooks	19.5	-13.4	-9.2
Russell	34.7	-4.7	-13.7
Sheridan	-31.5	24.6	-6.6
Sherman	18.2	6.1	-3.2
Smith	-0.4	7.7	-2.8
Thomas	23.7	19.0	-12.6
Trego	10.7	0.1	-5.7
Wallace	-12.5	3.7	-14.3

Source: Bureau of Economic Analysis, Table CA 5.

The two counties in the region with the highest employment are Ellis and Russell. Ellis county has had the highest employment growth of any county in the region over the last two decades. In the last half of the 1980s, however, the county experienced the decline typical of the region. Decline in employment and income growth has come from the loss of both manufacturing and mining jobs. Russell county is very dependent on oil and gas production and suffered declines in both employment and income in the later part of the 1980s.

Conclusion

During 1992, the recovery in Northwest Kansas from the regional recession of 1986-87 continued, slowed by the abnormally slow recovery of the state and national economies from the 1990 recession. Some factors can be identified that will aid recovery during 1993. First is the National Energy Strategy Act, which provides incentives for domestic oil and gas industry exploration and production. Since oil and gas are important driving forces in the regional economy, we expect more growth to result.

Another important driving force for the regional economy is agriculture, and here the outlook is not so bright. If the Europeans could be persuaded to lower their subsidies to agricultural production, their taxpayers would benefit, as would the agricultural outlook for Northwest Kansas. But this is no secret to anyone; if it were easy, it would have already been done; and evidence of the difficulty of actually taking advantage of the savings of de-subsidization is ample. One need look no further than the responses of French farmers to mere mention of cutting subsidies. At times it seems there are more tractors in Paris than in the French countryside. Grain importers may find it more difficult and more costly to acquire credits in 1993.

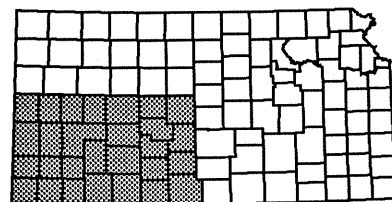
Finally, state and local government employment may fail to grow at its recent trend rate. Austerity at the basic levels of government are likely, not only for internal reasons, but also as a result of federal reductions in medical subsidization and in other program sharing. Government downsizing is likely to match or even exceed that of the private sector in the 1990s. The Federal deficit demands it, and it is likely to be painful, but the alternative is too bitter to contemplate.

All things considered, slow but positive growth is our outlook for Northwest Kansas in 1993. The long term outlook shows potential for growth, but only if key industries can become more competitive.

Southwest Kansas

by

Ralph Gamble



Foreword

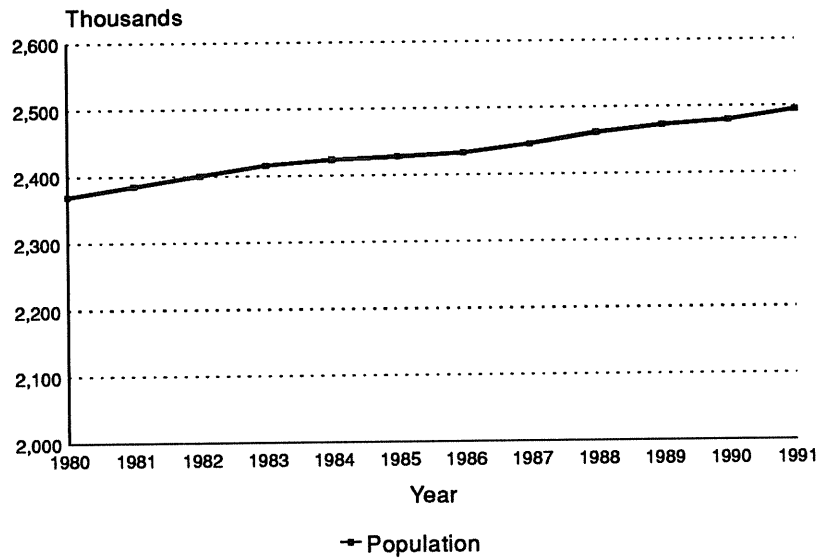
The Southwest Kansas Region extends over an area about one-fourth the size of the state and holds about 8.5% of the state population. The region includes twenty-eight counties in the southwest corner of the state (Including Barber, Barton, Clark, Comanche, Edwards, Finney, Ford, Grant, Gray, Greeley, Hamilton, Haskell, Hodgeman, Kearny, Kiowa, Lane, Meade, Morton, Ness, Pawnee, Pratt, Rush, Scott, Seward, Stafford, Stanton, Stevens, and Wichita counties). The largest cities in the region are Garden City, Dodge City, Liberal, and Great Bend.

The major components of the economy of Southwest Kansas are food processing, oil and gas production, and agriculture. Several factors seem to indicate that the economic outlook for the region in the near future is positive. The passage of the National Energy Strategy act was followed by a four percent increase in the number of working oil and gas rigs in the U.S., over sixteen percent of which was in Kansas. This would seem to indicate that the bill has provided effective incentives for oil and gas production. If increases in exploration and production continue, it will be beneficial for Southwest Kansas, since mining employment is an important force in the regional economy. For this, and other reasons to follow, optimism is the watchword for the Southwest Kansas economy in 1993.

Demographics

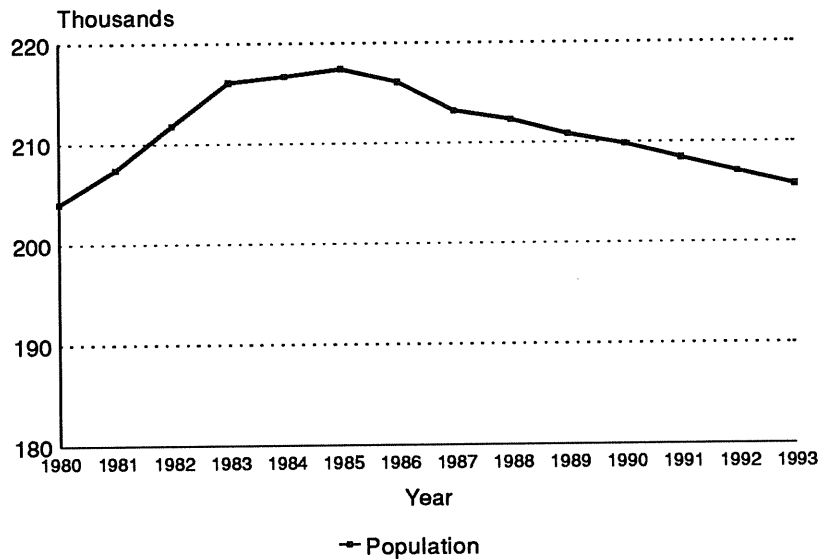
In 1980 the population of southwest Kansas was 204,000, which represents 8.6 percent of the state's population. Population grew until 1985, then decreased in the remainder of the decade, so that in 1990 it was 209,800 or 8.5 percent of the state's population. Southwest Kansas began the decade of the 1980s with a population growth rate exceeding the rest of the state, but fell below the state average later in the decade. In 1990, the population share was approximately the same as it had been ten years earlier. If the local trend continues, population in the region will continue to decline, both in absolute numbers and as a percentage of statewide population. For 1993, we expect the Southwest Kansas population to be approximately 206,000. A

Figure SW-1
Kansas Population



Source: Bureau of Economic Analysis, Table CA 5

Figure SW-2
Southwest Kansas Population

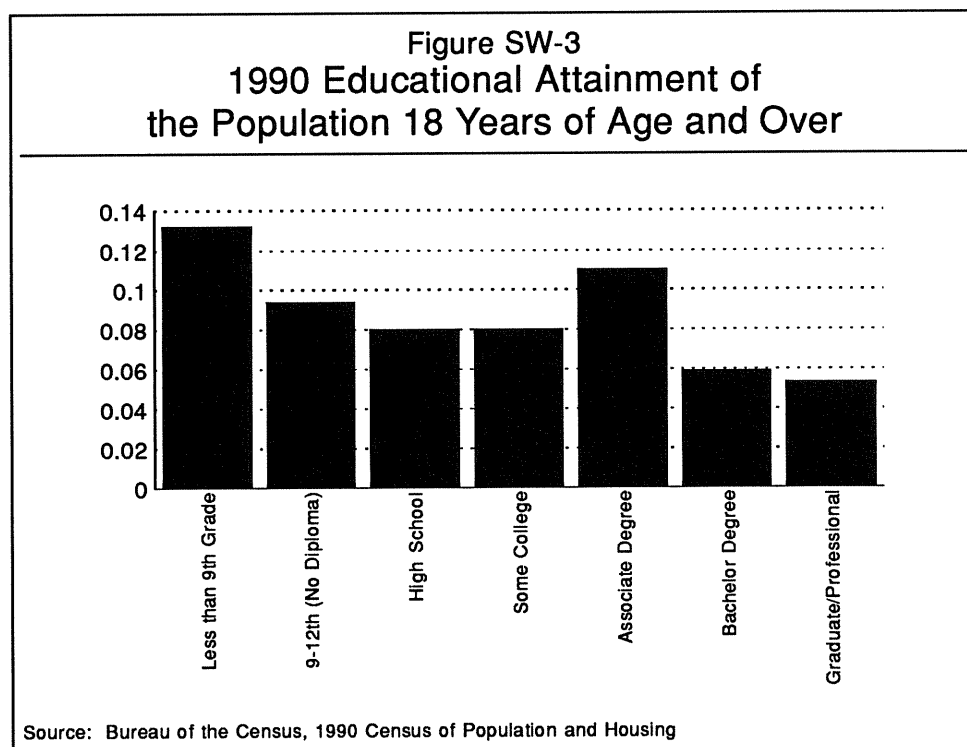


Source: Bureau of Economic Analysis, Table CA 5

comparison of Kansas and Southwest Kansas population growth trends is displayed in Figures SW-1 and SW-2.

The age distribution in the region is skewed compared with that of the state. Southwest Kansas has far less than an 8.5 percent share of the state's 21-year-olds and a greater share of the very young and old. This has wide implications for public policy and social services ranging from day care and pediatrician needs to education demand and long-term health care facilities.

One of the most interesting aspects of Southwest Kansas demographics is how the distribution of educational achievement in the region compares to the remainder of the state. In both 1980 and 1990, the population of Southwest Kansas was approximately 8.5 percent. Yet Southwest Kansas has shown more than an 8.5 percent share of persons with less than a ninth grade education. Southwest Kansas has more less-educated persons than its population would warrant -- more than 50 percent more. Those persons with four or more years of college are less-than-proportionally represented. Southwest Kansas has less than six percent of the state's bachelor degrees, and approximately five percent of the higher degrees. Figure SW-3 represents



the number of persons in Southwest Kansas in each educational category as a function of the total number of people in that category in the state. The three bars above .085 represent categories in which the region is over represented relative to the state, while the four bars below .085 represent categories in which the region is under represented relative to the state.

Employment Trends

The most important sectors for non-farm employment in southwest Kansas are the service sector and state and local government. These two sectors are approximately equal in size, each accounting for about 21 percent of total nonfarm employment in the region. The next two largest employment sectors are retail trade and manufacturing. Together, these four sectors account for about 71 percent of nonfarm employment in the region. The smallest sectors are agricultural services, forestry and fishery, transportation and public utilities, mining, and construction. The relative employment shares in each sector are displayed graphically in Figure SW-4.

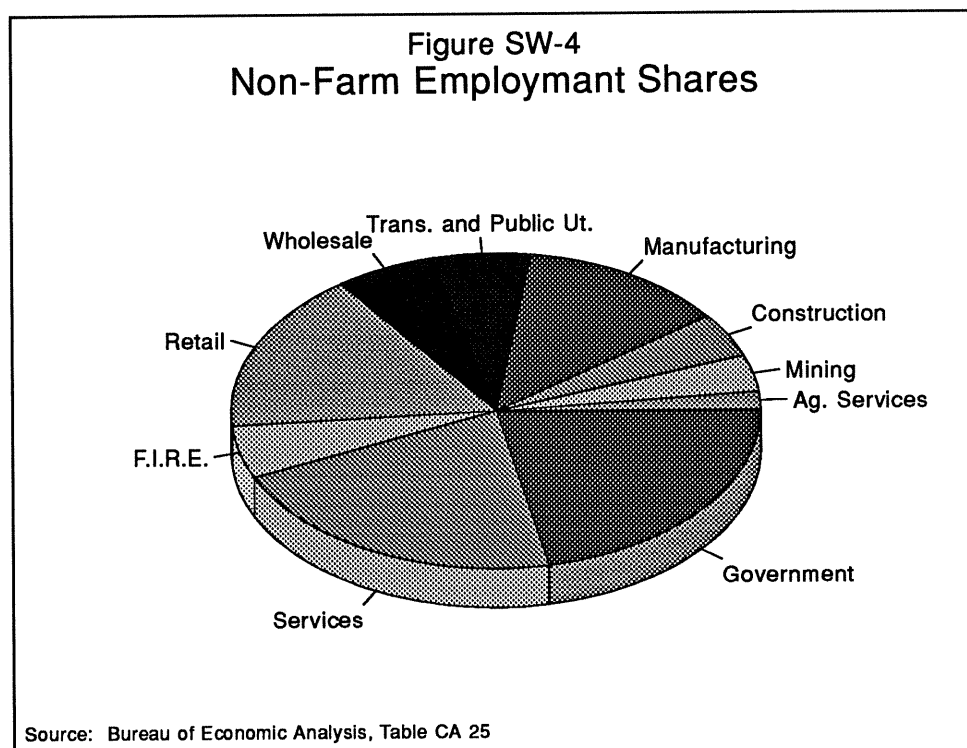
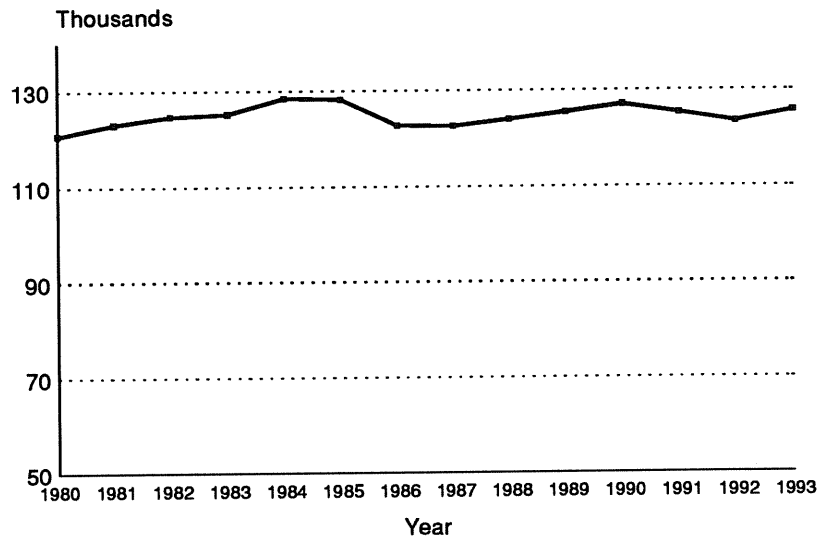
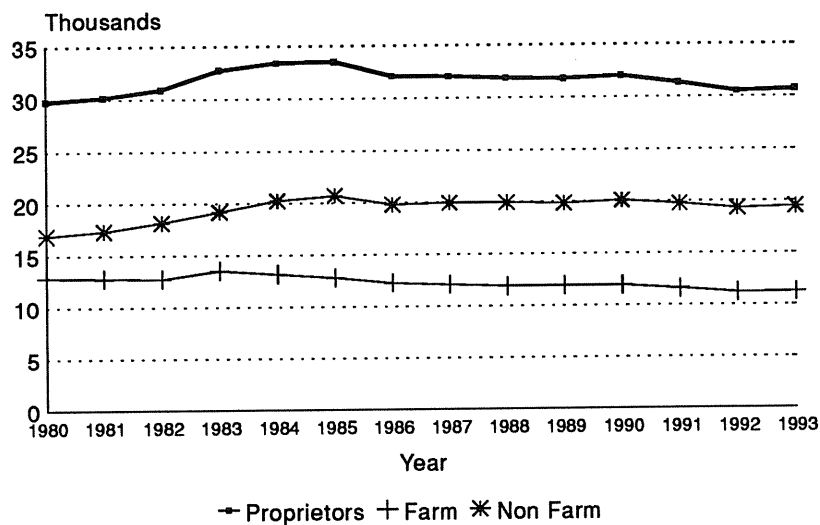


Figure SW-5
Southwest Kansas Employment



Source: Bureau of Economic Analysis, Table CA 25

Figure SW-6
Proprietors
Farm and Non-Farm



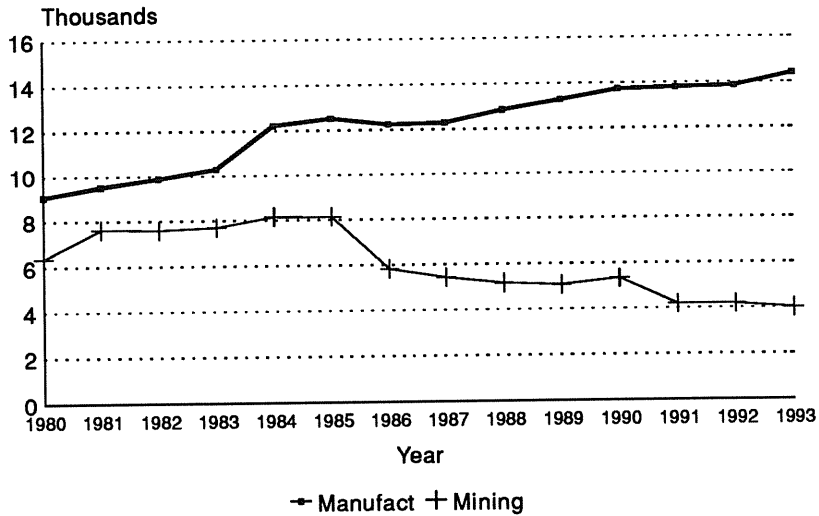
Source: Bureau of Economic Analysis, Table CA 25

Total employment for Southwest Kansas since 1980 is illustrated in Figure SW-5. It has been remarkably steady, with the exception of a large drop from 1985 to 1986. Figure SW-6 shows the recent history of employment of proprietors, both farm and nonfarm. The number of farm proprietors has declined gently over the period. The number of nonfarm proprietors grew during the early part of the 1980s, but has remained relatively constant since.

During the 1980s nondurable manufacturing grew as a primary source of economic development in Southwest Kansas. In particular, food processing grew, making up the largest share of nondurable manufacturing. Growth was faster in Southwest Kansas than in the remainder of the state, so that by 1990 the share of nondurable manufacturing located in Southwest Kansas had almost doubled to 11 percent from the 1980 level of 6 percent. Clearly this is a reflection of the meat processing industry growth centered in the red meat triangle between Liberal, Dodge City, and Garden City. As services producers and other suppliers continue to grow along with the meat industry, Southwest Kansas will develop a locational advantage over other regions, leading to continued growth in the industry. Manufacturing employment probably remained steady in 1992 at approximately 13,750 persons. If the trend reasserts itself in 1993, then manufacturing employment should increase to 14,400 persons. Figure SW-7 illustrates the recent history of, and forecast for, manufacturing employment for the Southwest region. As that figure shows, the trend has been fairly steadily upward, except for an unusually rapid increase from 1983 to 1984 followed by a level period from 1985 through 1987.

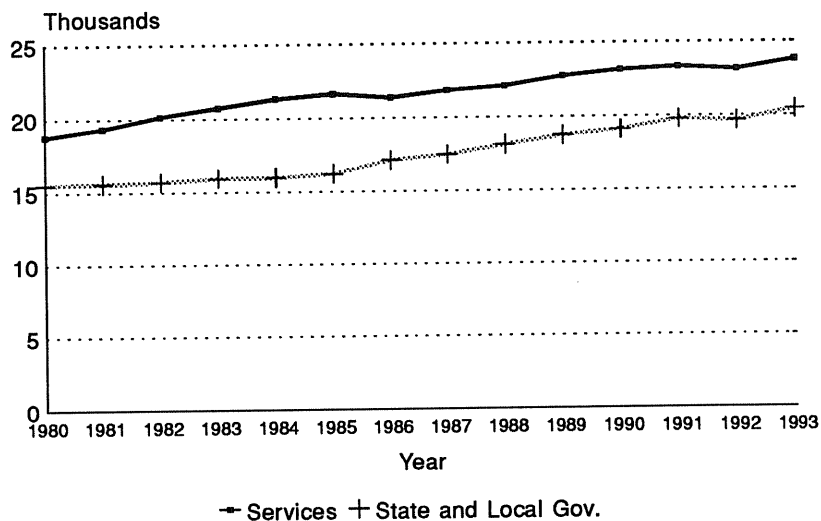
Over 30 percent of the state's mining industry employment is concentrated in Southwest Kansas. In 1990 the number of persons employed in the mining sector (almost entirely oil and gas) was 5,344. The number itself does not seem large, for the region or the state, but in Southwest Kansas extractive industries are primary industries that cause growth in population and ancillary services. Thus, the numbers are more significant than their small size implies. Because the trend in mining since 1986 is slightly declining, the forecast for 1993 is for 4,010 persons to be employed in the industry. However, the National Energy Strategy Act provides incentives for increases in exploration and production that could begin to result in greater activity in the region by mid 1993. Although prices may slip downward as the winter ends, lower tax burdens for oil producers should allow them to be more lucrative than in prior years. In addition, many large energy firms continue to look to natural gas as the fuel of choice for the future, since

Figure SW-7
Employment
Mining and Manufacturing



Source: Bureau of Economic Analysis, Table CA 25

Figure SW-8
Employment
Services and State and Local Government



Source: Bureau of Economic Analysis, Table CA 25

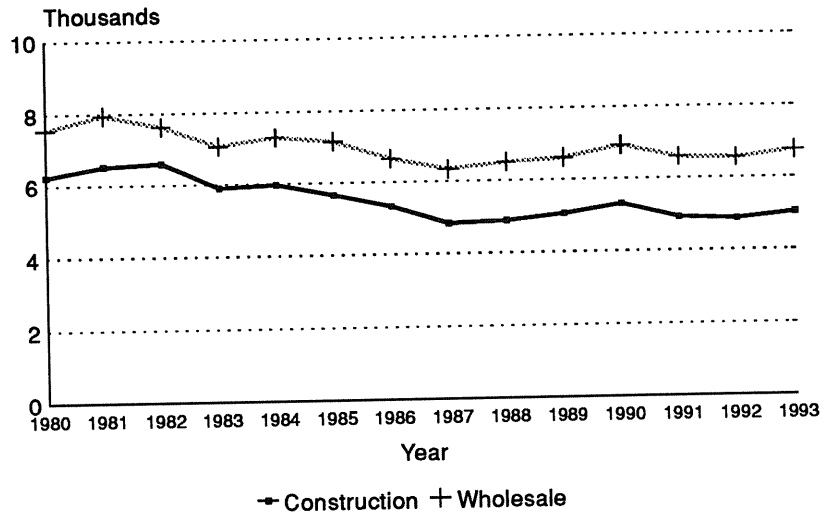
it is clean burning, non-polluting and abundant. These firms prefer to acquire rights and secure reserves for future use. These factors may lead to a performance that exceeds the trend forecast by the end of 1993. The path of mining employment is shown in Figure SW-7. Since 1980, employment in mining in the region has endured a sequence of downward shocks from which it has not recovered.

Since 1985, state and local government employment has grown more rapidly in the Southwest region than in the remainder of the state. By 1989, per capita state and local government employment was 122 percent of the statewide number. In 1990, however, signs appeared that the growth was slowing. Employment increased by 350 persons, a smaller percentage increase than in the remainder of the state. If the local trend continues, then by the end of 1992, employment will decrease slightly to 20,400 persons. However, if governments are subject to the pressures of lower growth in tax collection rates, this forecast may be too optimistic. A ten year history of state and local government employment in the region, plus a forecast through 1993, are shown in Figure SW-8.

Another important employment sector in the region, as in the state and nation, is the service sector. This sector has shown continuous growth in the 1980s, except for a single year (1986). In addition to growth, service employment in aggregate is more stable than other sectors. It is likely that service employment may have declined slightly during the recent recession. But it is also likely that the lengthy trend toward a service economy is too powerful to be long delayed, and will resume in 1993. If it does, then Southwest Kansas should see approximately 23,800 persons employed in this vital industry in 1993. The history of, and forecast, for service sector employment are shown in Figure SW-8.

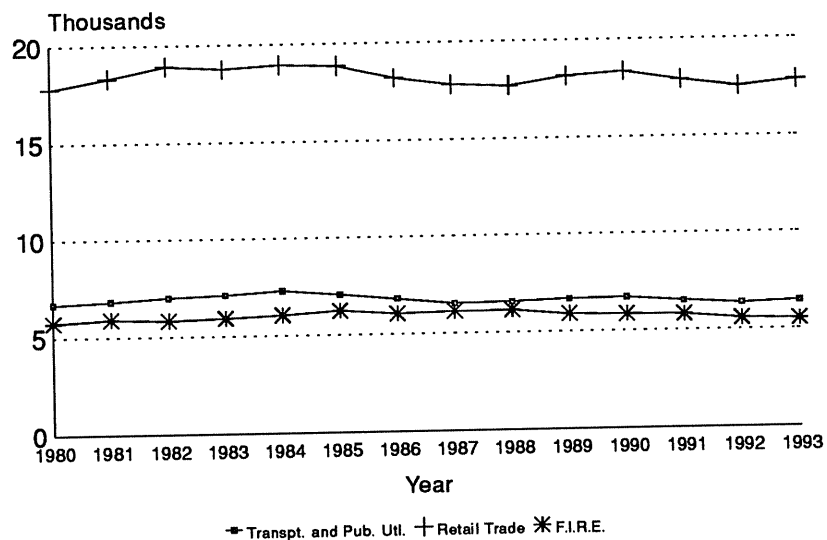
Construction continues to rebound in the region. The worst year occurred in 1987, after the exodus of oil field workers. Between 1982 and 1987, 1,766 jobs were lost in the construction industry, a decrease of 27 percent. Since then, recovery has been slow but steady, at least until the recent recession. It appears that the glut of unsold homes has at long last begun to diminish. Electrical contractors are busier than in any recent year. Housing starts are higher in 1992 than most analysts expected. If recovery continues, some two hundred additional jobs should be added in construction next year, bring the number employed to approximately 5,025. The mostly

Figure SW-9
Employment
Construction and Wholesale



Source: Bureau of Economic Analysis, Table CA 25

Figure SW-10
Employment
Transportation and Public Utilities, Retail Trade, and F.I.R.E.



Source: Bureau of Economic Analysis, Table CA 25

downward trend of construction employment in Southwest Kansas in the early 1980s is shown in Figure SW-9.

Wholesale trade employment provides stability to the region, neither growing nor shrinking. This year, approximately 6,600 persons work in wholesale trade. Next year, moderate growth should bring employment to 6,750 persons. But the long term outlook for wholesaling is not good. More and more businesses find it cost-effective to closely align sales with orders, using flexible delivery by truck, with arrival times scheduled just as the products are required. This effectively bypasses one or more layers of intermediate storage, doing away with the need for wholesaling or inventory storage. As the just-in-time methodology becomes more widely used, wholesale employment should be adversely affected. The employment forecast for wholesale trade is shown in Figure SW-9.

For the industries mentioned above, employment in southwest Kansas industries has been growing or stable. But other industries have been in decline. For example, transportation and public utilities employment declined between 1985 and 1987 and may never fully recover. From 1984 to 1987, employment in the industry fell by some 11 percent, and has experienced little growth since. The one consolation is that remaining employees in the industry are more productive, essentially providing more output with fewer employees. In 1993, approximately 6,440 jobs are forecast. Long term, continued shrinkage is likely, although further productivity increases may increase incomes of employees in the industry.

Another industry in decline is the retail trade sector. It is an important sector in the region, one of the "big four" in terms of total employment. It is also a training sector, because it employs a large number of young, part-time, inexperienced workers, giving many their first work experience. Employment in the sector peaked in 1984, with 18,947 employees. The next four years saw declines in employment. By 1988, employment had fallen to 17,725 persons. In 1989 and 1990, jobs were added in the sector and in 1990 employment reached 18,371. Since Retailing is sensitive to overall economic conditions, it is probable that the number of jobs in the sector has fallen since 1990 and will have dropped to about 17,600 by the end of 1992. As the region's recovery continues in 1993, retail employment is forecast to grow by only 300, to approximately 17,900 persons.

As mergers and acquisitions of existing businesses in the finance, insurance and real estate sector occur, employment opportunities decline. So it has been in southwest Kansas. From a

high of 6225 positions in 1985, employment decreased to 5827 in 1990. Further declines are likely. Although remaining employees are more productive than ever, fewer opportunities in the industry occur. For 1993, employment in the sector should number some 5,500 persons. The forecasts for employment in the transportation and public utilities, retail trade, and finance, insurance and real estate sectors are shown in Figure SW-10.

Income

During the decade of the 1980s, total real personal income¹ in southwest Kansas grew about 22 percent, from approximately \$2.8 billion in 1980 to more than \$3.4 billion in 1992 (see table SW-1 below). This represents a larger growth rate than was seen in the remainder of the state. Growth of real income was fairly steady throughout the decade, with increases occurring in all but three years (1983, 1987, 1989). With the regional recovery expected to gather momentum, real personal income should continue to increase, reaching \$3.33 billion in 1993.

The major component of total personal income in southwest Kansas is nonfarm personal income. An examination of Tables SW-1 and SW-2 reveals two facets of its importance: first, its growth rate has been very similar to that of total personal income; second, has made up around 80% of total personal income. By the end of the 1993, real nonfarm personal income should reach \$2.7 billion in the region.

In relation to the rest of the state, the southwest Kansas share of total personal income mirrors the population trend over the period. In the first part of the 1980s, population grew faster in southwest Kansas than in the rest of the state, increasing from 8.6% in 1980 to 9% in 1985. After 1985, population growth in Southwest Kansas slowed, so that the by 1990, the region accounted for only 8.5% of the state population. The share of the state's total personal income followed a similar path, increasing until 1984 and declining after that year. Current data are unavailable, but anecdotal evidence leads to the conclusion that population will continue to grow more slowly, and personal income will increase faster than in the remainder of the state, so that the Southwest Kansas share of total personal income will increase slightly in the first half of the 1990s.

¹ Adjusted for inflation using the Gross Domestic Product Price Deflator. Base year is 1987.

Table SW-1
Southwest Kansas
Real Personal Income
Percent Change

	<u>1980-1985</u>	<u>1985-1990</u>	<u>1990-1993</u>
Total Personal Income	18.5	3.0	-1.2
Nonfarm Personal Income	8.1	-0.3	-2.6
Farm Income	150.9	21.4	5.2
Per Capita Income	11.2	6.8	0.1

Source: Bureau of Economic Analysis, Table CA 5.

Table SW-2
Percentage Shares of
Real Personal Income
Southwest Kansas

	<u>1980</u>	<u>1985</u>	<u>1990</u>
Total Personal Income	100.0	100.0	100.0
Nonfarm Personal Income	92.8	84.6	81.9
Dividend, Interest, Rent	19.1	20.1	19.1
Transfer Payments	12.4	12.0	14.2
Wages/Salaries	51.5	45.4	40.5

Source: Bureau of Economic Analysis, Table CA 5.

Real per capita income (average income per person) has grown steadily since 1980. In 1980, per capita income in Southwest Kansas was \$13,703. By 1990, it had grown to \$16,264, an increase of nearly 19%. Real per capita income declined only slightly during the regional recession of 1987 and the national recession of 1990-91. The stability was largely attributable to the increases in nondurable manufacturing incomes, transfer payments, service sector incomes (mainly health care related) and payments to employees of state and local governments. In 1993, the region's per capita income should reach \$16,275.

Not surprisingly, the industries showing the strongest employment growth were also responsible for a large part of real income growth. One of the region's strongest contributors to

income growth during the decade was nondurable manufacturing, consisting mostly of meat processing. The sector is expected to continue to generate increasing amounts of income. In 1993, the industry is forecast to generate \$207 million in real regional income.

Another powerful income source for Southwest Kansas is the service sector, of which one-third is directly related to health care, and an unknown but possibly significant portion of the remainder indirectly driven by health care. Service income has grown almost every year during the decade, and continues to provide large increments to the Southwest Kansas income base. During the recent recession, service income in the region did not show the same drop that was seen on the national level, indicating greater stability in the region service economy. It is our impression that service income has continued to grow in the region. The forecast for 1993 service sector income is \$405 million, with \$125 million being generated by health care services.

Transfer payments are a large and growing component of total income in Southwest Kansas. This has been especially true since the mid 1980s, despite the fact that population in the region peaked in 1985. The increase has resulted in more concentration of transfers in the region, although the effect is slight. In 1980 transfer payments in Southwest Kansas were 8 percent of the state total. By 1990 transfer payments had grown to 8.5 percent of the state total. The change is small and is remarkable only when coupled with the change in population share of Southwest Kansas. Population first grew and then declined. Transfer payments as a percentage of the state total have stayed relatively constant; if anything, the share indicates a slight upward drift. We expect both the amount and the share to increase. In 1993, real transfer payments to Southwest Kansas should total \$509 million.

Income from dividends, rent, and interest has also increased even as population has declined in the region. Real dividend, rent and interest income grew from less than \$350 million in 1980 to over 650 million in 1990. The trend is expected to continue, so that dividends, rent, and interest income should generate over \$640 million in 1993.

State and local government employment has provided Southwest Kansas with continuing increases in income from 1980 onward. In 1980, this sector generated \$221 million in real income; in 1990 it generated \$299 million. This amounts to growth of 35%. This growth occurred even as population growth decreased after 1985. If the trend continues, state and local income should remain around \$300 million in 1993. However, possible budget stringencies at both the state and local levels would seem to imply an eventual end to state and local

government income growth. In addition, Federal government passthrough reductions have recently resulted in Medicaid cutbacks, which may force reductions not only in health service income but also in state government income generation. Therefore, the prediction of \$300 million for 1993 may be viewed as an upper limit to the forecast; the actual value is likely to be lower.

Long Range Outlook

In order to get an idea of the long term outlook for a region, it is important to determine what industries are most important, examine how well the industries have been doing, and attempt to foresee any trends that might impact future performance in these sectors. Industries can be important for different reasons. An industrial sector that holds a large share of total employment in a region will obviously be important. Other industries that do not make up as large a share of total employment may also be important, however. An industry that possesses some advantage in production in a region that makes it location specific is also likely to be important because it will have the specific ability to attract employment and growth to that region. If state and national trends are positive for these types of industries, a region is likely to see growth that will spill over to other sectors.

As mentioned earlier, the sectors in Southwest Kansas with the highest employment are agriculture, government, services, retail trade, and manufacturing. Agriculture and manufacturing are important not only because of their size, but also for their potential to attract employment to the region. Southwest Kansas has held a large share of the state's farm employment, about 20 percent. The fact that farm employment is over-represented as a share of population indicates Southwest Kansas is likely to benefit more than the state overall if agriculture shows positive growth. The future of agriculture, however, is not very clear and will depend on government subsidy programs and trade negotiations.

Manufacturing employment has been under-represented in Southwest Kansas, totaling only about 50 to 70 percent of what might be expected given state employment and local population. The trend has been upward, however, with steady increases throughout the 1980s. The fact that the region has been gaining a larger share of the state's manufacturing employment seems to indicate that Southwest Kansas is becoming more competitive in this sector. Most of

the growth has been in red meat production. The growth of this industry is clearly a positive sign for the region.

For long term growth in manufacturing to be sustained, however, it will be important to attract other manufacturing firms to Southwest Kansas. Industrial machinery and equipment manufactures make up the second largest portion of the region's manufacturing employment. Employment in these industries is not very large and has not shown growth anywhere close to that in food processing. Attracting employment in industries such as these as well as in food processing would help sustain regional growth and add diversity to the manufacturing sector, contributing significantly to long term growth in the region.

Since about 30 percent of the state's oil and gas employment is concentrated in the Southwest, statewide growth in the industry benefits Southwest Kansas more than other regions. New incentives make the future look positive for mining which should help Southwest Kansas in the long term.

The other major employment sectors, services and retail trade, are likely to follow the trends of the rest of the economy. Services may have some potential to stimulate growth in other areas, but retail sales is almost totally dependent on growth in other sectors. These are large employment sectors, however, and if regional employment shows long term growth, a large share of the growth will likely be in these sectors.

Overall, the long term outlook for Southwest Kansas appears somewhat uncertain. Clearly the most important sectors for stimulating growth will be agriculture, mining, manufacturing, and to some extent services. The fact that manufacturing seems to be getting more competitive and oil and gas production are likely to increase are certainly positive signs. Uncertainty in agriculture and oil and gas prices makes the future harder to predict, however.

Counties of Southwest Kansas

Most Counties in Southwest Kansas followed the trends of the region. Employment growth was not as strong (often negative) in the 1980s as in the 1970s. Tables SW-3 and SW-4 give growth rates of personal income and employment for each county in the region.

A few counties showed especially strong employment growth in the eighties. Seward, Ford, and Finney counties all had relatively strong growth during the decade. This is not

surprising because these counties all have very significant food processing employment, a major force in regional employment growth.

The counties suffering employment losses during the eighties were generally those fairly dependent on the mining sector. This was the case for Barton, Clark, Ness, and Pratt counties. Wichita and Barber counties also suffered employment losses, but they did not seem to be in any particular industry.

Table SW-3
Employment Growth
Counties of Southwest Kansas

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1985-1990</u>
Barber	14.4	-4.2	-13.2
Barton	38.1	-7.9	-11.2
Clark	-0.4	-10.1	-5.7
Comanche	-0.3	-3.1	-1.1
Edwards	5.0	-10.9	-0.4
Finney	71.2	46.3	8.8
Ford	28.5	21.3	10.0
Grant	33.9	1.1	6.7
Gray	29.3	-7.9	-4.2
Greeley	18.7	0.6	-1.5
Hamilton	17.7	-4.6	-4.7
Haskell	14.7	-9.7	-4.4
Hodgeman	-9.8	-12.0	-4.7
Kearney	24.8	-1.6	-3.5
Kiowa	4.0	-4.6	-2.8
Lane	9.1	-4.7	-0.8
Meade	0.3	-10.9	-1.5
Morton	17.5	2.1	-6.2
Ness	1.3	-3.4	-11.4
Pawnee	5.5	-2.0	4.7
Pratt	16.3	-2.5	-12.2
Rush	-4.7	-8.5	-5.2
Scott	11.1	-5.5	-2.1
Seward	38.9	13.1	1.8
Stafford	0.8	-6.7	-6.6
Stanton	20.4	-4.4	4.2
Stevens	35.3	4.6	1.7
Wichita	19.3	-33.7	-8.8

Source: Bureau of Economic Analysis, Table CA 25.

Table SW-4
Real Personal Income Growth
Counties of Southwest Kansas

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1985-1990</u>
Barber	36.2%	-5.7%	-8.5%
Barton	33.1	-2.1	-8.2
Clark	-4.9	36.5	18.9
Comanche	-7.7	15.6	2.7
Edwards	-13.9	45.4	-4.4
Finney	54.7	43.3	11.9
Ford	29.7	19.6	6.0
Grant	16.4	36.9	33.8
Gray	7.4	18.2	12.2
Greeley	-8.7	43.8	6.3
Hamilton	-1.0	56.3	22.6
Haskell	-5.7	5.7	-4.1
Hodgeman	-22.5	34.4	6.5
Kearny	17.4	70.5	16.2
Kiowa	15.8	27.5	4.5
Lane	1.1	5.3	4.3
Meade	-17.3	18.7	-9.6
Morton	11.0	24.9	-7.3
Ness	30.6	13.1	-3.8
Pawnee	-9.4	28.0	4.4
Pratt	3.1	25.1	-6.1
Rush	23.3	-3.0	0.3
Scott	6.7	38.9	20.8
Seward	31.8	17.8	-2.7
Stafford	3.4	20.6	-5.2
Stanton	-39.3	114.6	26.3
Stevens	32.7	43.5	4.7
Wichita	-24.2	36.0	11.5

Source: Bureau of Economic Analysis, Table CA 5.

A few counties exhibited an interesting trend in real income growth. Even as employment dropped, income seemed to grow. In these counties, income growth came more from transfer payments, dividends, interest, and rent than from wage and salary income. This was the case for Clark, Kearny, Stanton, and Wichita counties.

Summary

1993 should be a year of continued recovery from what was a relatively mild recession for the region and the state. The possibility exists for more rapid growth than forecast. Banks have rebuilt their capital base, and have very large levels of secondary reserves ready for lending. Interest income, earnings from fees, and yields from securities continue to exceed expectations. Interest rate spreads are high, prompting banks to seek borrowers. Interest rates, especially short term rates, are lower than the rate of inflation, so that short term real rates are negative. This makes it essentially costless to finance inventory rebuilding. If the national and state economies accelerate, southwest Kansas may well lag behind, simply because the regional economy is more stable than the larger economies. It may not recover as rapidly because it declined less, and had less to recover from. Slow growth from a mild downturn may be preferable to rapid recovery from a deep recession.

The primary growth factors for the regional economy are oil and gas, nondurable manufacturing, agriculture and related enterprise and services. As of this writing (mid-October, 1992) the outlook for these sectors is as follows:

Oil and gas production should benefit from the incentives in the energy policy act recently passed by Congress. Prices are unpredictable, but they too may add to exploration incentives. Current trends indicate exploration should increase in 1993.

Nondurable manufacturing should continue its growth in 1993. In the regionally strong food processing industry, it would not be surprising to see further expansion in producing, feeding, working, processing and transportation capacity for livestock in the region.

The outlook for services is also good. As the population continues to increase in average age, demand for health services, the largest service industry, is likely to increase. Business services, the second largest component of the service sector, should see continued growth, necessitated by the increase in food production capacity and specialization in the region.

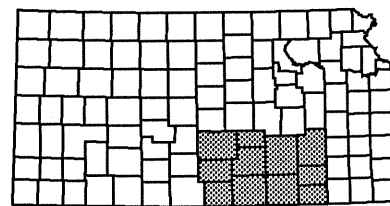
The outlook for agriculture is less certain. For the immediate future, growth does not appear likely. From a more long term perspective, growth may be possible. If international markets for American agricultural products can be established, Southwest Kansas is likely to benefit more than the rest of the state or nation.

All in all, 1993 is likely to yield further economic development in Southwest Kansas. The long term outlook is less certain, but the potential for growth clearly exists.

South Central Kansas

by

Carlene Hill Forrest



Introduction.

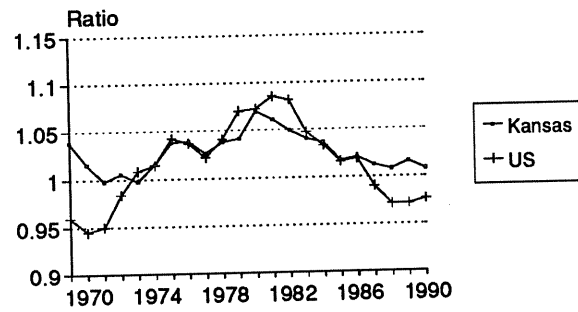
The purpose of this profile and others being prepared around the state is to update Kansas' strategic plan for economic development. The profile reviews the major trends in earnings, employment, and population during the past few years in South Central Kansas. Major strengths and weaknesses are noted. The report concludes with a discussion of the region's near-term economic outlook.

The South Central region of Kansas is defined to include Butler, Chautauqua, Cowley, Elk, Greenwood, Harper, Harvey, Kingman, Reno, Sedgwick, and Sumner counties. The region is composed of several diverse counties. For example, 1989 household income varied from a low of \$17,067 in Chautauqua County, to a high of \$31,012 in Butler County. Because the state's largest city is within this region (Wichita, in Sedgwick County), considering fully aggregated data can mask key characteristics of the region. Thus, in many cases this report looks not only at the region as a whole, but also at Sedgwick County and the region excluding Sedgwick County, separately. One clear pattern that emerges is that in most periods Sedgwick County has performed significantly better than the rest of the region. Indeed, although the region's economy has fluctuated between periods of outperforming the state and periods of underperforming the state, it is common in both types of period for Sedgwick County to outperform the state and the rest of the region to underperform the state.

The region is a major population and industrial center for the state. Nearly 26 percent (25.9%) of the state's population resides within the 11 county area. Twenty-six percent of the state's personal income during 1990 came from this region. In 1991, 24.9 percent of all retail sales for the state came from this region. The region tends to be much less agricultural than the state; Kansas gets only 10.6 percent of its agricultural income from the South central region.

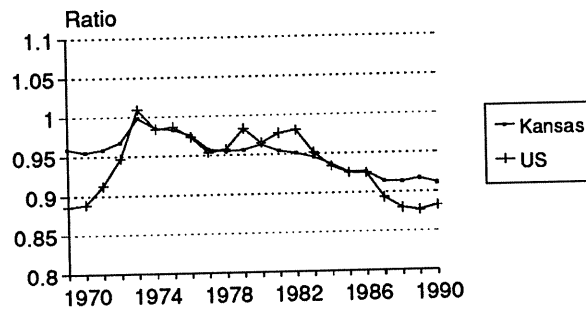
A central feature of the region is that a large share of the state's manufacturing base is located there. Almost 40 percent (39.6%) of the state's manufacturing jobs are located in South Central Kansas. The primary manufacturing industry in the area is aircraft production and related parts and tool suppliers. The area's largest aircraft employer is also the state's largest private

Figure SC-1a
Per Capita Income Relative to Kansas and U.S.
South Central Kansas



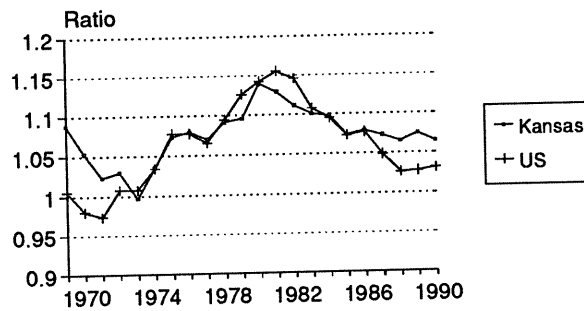
Source: Bureau of Economic Analysis, Table CA 5

Figure SC-1b
Per Capita Income Relative to Kansas and U.S.
Excluding Sedgwick County



Source: Bureau of Economic Analysis, Table CA 5

Figure SC-1c
Per Capita Income Relative to Kansas and U.S.
Sedgwick County



Source: Bureau of Economic Analysis, Table CA 5

employer, Boeing. Boeing is also the nation's largest exporter and virtually everything produced at Boeing's Wichita plant is exported out of Kansas.

General aviation manufacturers in the region include Beech Aircraft Corporation, Cessna Aircraft Company, and Learjet, Inc. Other large manufacturers include the Coleman Company (outdoor products), Chance Industries (trolleys, carousels), and Koch Industries Inc. (a diversified producer of petroleum related products and services.) Communities surrounding Sedgwick County are more dependent on health care services and state and local government for income, but they also have a significant number of small shops producing aircraft parts and tools.

Due to the highly skilled nature of the work required in aircraft and parts production, the region's share of the state's earnings from manufacturing is even higher than its share of the state's manufacturing employment. Of every \$100 dollars earned in a manufacturing job somewhere in the state, \$45.80 is earned within these 11 counties. Most of those dollars represent new dollars to the state and the region, since the vast majority of aircraft products are exported.

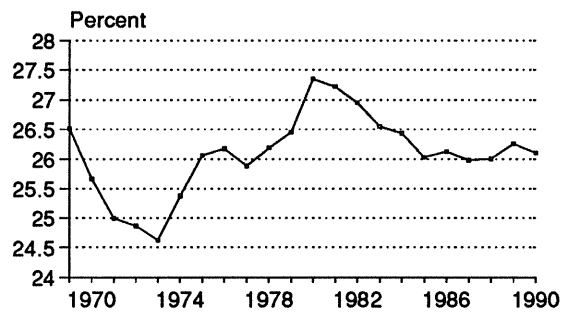
While Sedgwick County has outperformed the state by a number of measures during the past decade, the remainder of the region shows signs of weakness. Some of these signs will be examined in more detail below.

Income and Earnings.

Figures SC-1a through SC-1c show per capita personal income as a ratio of the state's and the nation's per capita personal income. A number below 1.0 indicates that per capita personal income in the local region is below per capita personal income in the region to which it is being compared (Kansas or the U.S.). Per capita personal income in the entire region has outperformed the state consistently for the past 15 years. However, beginning in 1987, the region's per capita personal income has consistently fallen below that of the nation (Figure SC-1a).

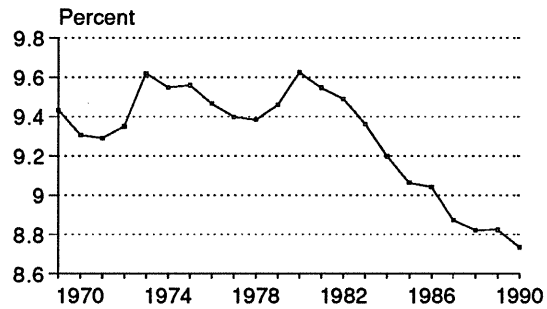
One could raise the question of whether the differential in per capita personal income is offset by somewhat lower costs of living in the area. However, it is clear from Figure SC-1b that in the areas outside Sedgwick County the differential between the local region and the nation is so great that it is unlikely to be offset by lower costs of living. For the region excluding Sedgwick County, the per capita personal income has only matched or exceeded the Kansas and U.S. levels once during the past 22 years. Since 1983 the comparison has become less favorable

Figure SC-2a
Total Personal Income as a Percent of State Total
South Central Kansas



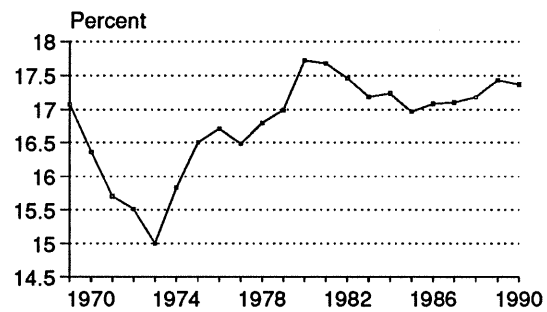
Source: Bureau of Economic Analysis, Table CA 5

Figure SC-2b
Total Personal Income as a Percent of State Total
Excluding Sedgwick County



Source: Bureau of Economic Analysis, Table CA 5

Figure SC-2c
Total Personal Income as a Percent of State Total
Sedgwick County



Source: Bureau of Economic Analysis, Table CA 5

each year. The trend is accounted for by the decline in the oil and gas industry, declining land values and farm income, and the declines in general aviation, all of which began to lose ground in the early 1980s. In 1980 over three percent of earnings in the region outside of Sedgwick County were from mining. By 1990 that share had dropped to less than two percent. In contrast to the rest of the region, per capita personal income in Sedgwick County has consistently outperformed both Kansas and the nation since the mid-seventies (Figure SC-1c).

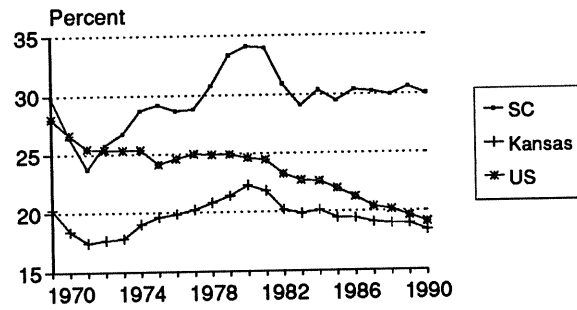
Figures SC-2a through SC-2c show the share of the state's total personal income coming from the region.¹ The region's contribution to the state's personal income has been steady at around 26% since the middle 1980s. But when we consider the region exclusive of Sedgwick County (Figure SC-2b), its proportional contribution to the state's personal income has continued to decline since the beginning of the 1980's. The recessionary effects of the declines in general aviation, farm land values, and oil and gas, of the early 1980s still linger in the area outside of Sedgwick County. Sedgwick County's contribution to the state's personal income has been increasing since the middle of the 1980s (Figure SC-2c).

Figures SC-3a through SC-3c tell a similar story. The region's share of earnings from manufacturing employment has outperformed the nation and Kansas and is fairly steady at around 30 percent. This is not true, however, of the region outside of Sedgwick County, where the share of earnings from manufacturing has declined from 26 percent in 1980 to 17.5 percent in 1990. Sedgwick County's share has also declined since 1980, but has recently recovered and is fairly steady at 34 percent.

The declines in earnings from manufacturing in the region have been somewhat offset by increases in the share of earnings from services and government. The percent of the South Central region's total earnings from services has increased from 17.5 percent in 1980 to 23.8 percent in 1990, while the percent of the region's earnings from government has gone from 10.3 percent to 12.8 percent. The largest sector of services is health care related. An aging population and several large hospitals in the area account for most of this growth. For the 10

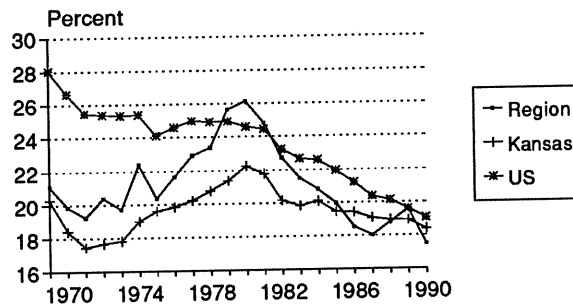
¹ Income and earnings data is from the U.S. Department of Commerce, Bureau of Economic Analysis, Personal Income Series. Personal Income is based on place of residence. Earnings is based on place of work.

Figure SC-3a
Percent of Earnings from Manufacturing Employment
South Central Kansas



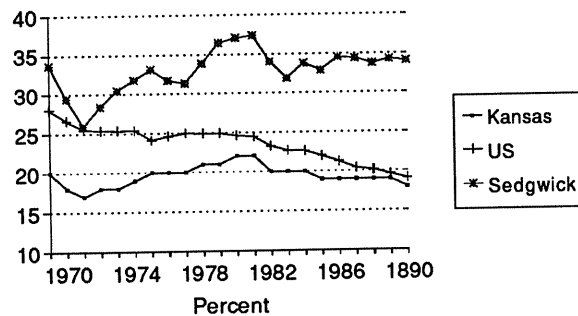
Source: Bureau of Economic Analysis, Table CA 5

Figure SC-3b
Percent Earnings from Manufacturing Employment
Excluding Sedgwick



Source: Bureau of Economic Analysis, Table CA 5

Figure SC-3c
Percent of Earnings from Manufacturing Employment
Sedgwick County



Source: Bureau of Economic Analysis, Table CA 5

counties excluding Sedgwick County, health care services account for 9.27 percent of all earnings. State and local government accounts for almost 15 percent of all earnings in those counties.

Employment.

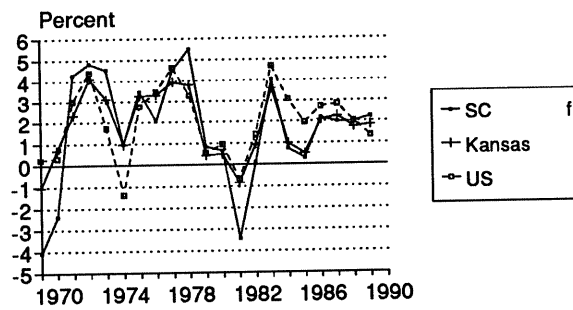
Figures SC-4a through SC-4c show that employment growth in the region closely follows employment growth rates for the state as a whole. But, when we look outside Sedgwick county, employment growth has underperformed the state and the nation for at least a decade.

Table SC-1
Employment by Place of Work
South Central Kansas

	<u>1980</u>	<u>1985</u>	<u>1990</u>
United States	112,256,700	123,175,600	137,160,200
Percent Change		9.7	11.4
Kansas	1,286,742	1,354,462	1,472,564
Percent Change		5.3	8.7
South Central Kansas	347,407	354,373	386,228
Percent Change		2.0	9.0
Sedgwick County	232,771	238,657	269,282
Percent Change		2.5	12.8
South Central Kansas Minus Sedgwick County	114,636	115,716	116,946
Percent Change		0.9	1.1

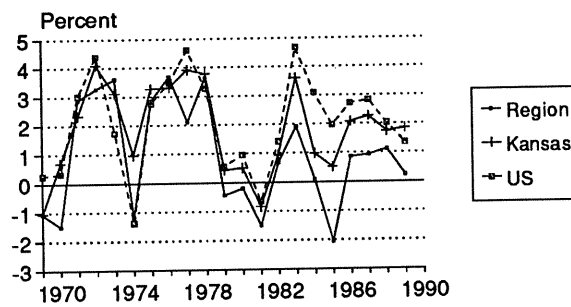
The early 1980s was a difficult period for the region. This can be seen from looking at the middle column of Table SC-1; from 1980 until 1985, employment in the region grew only 2.0 percent. This growth of employment significantly lagged even the state's 5.3 percent growth in employment, which itself was quite sluggish compared to the 9.7 percent growth in employment experienced by the nation. A further indication of just how bad the period was for South Central Kansas is that even Sedgwick County employment grew only 2.5 percent, less than half the rate of growth of the state. The second half of the decade saw significant improvement in the region,

Figure SC-4a
Total Employment Growth
South Central Kansas



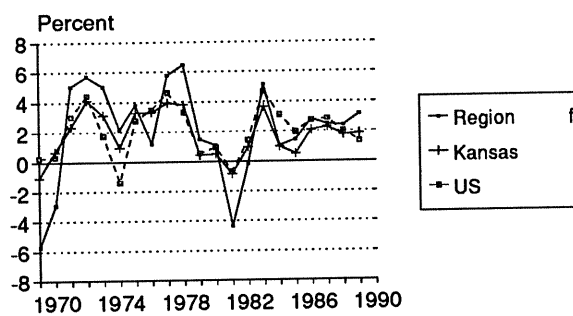
Source: Bureau of Economic Analysis, Table CA 5

Figure SC-4b
Total Employment Growth
Excluding Sedgwick



Source: Bureau of Economic Analysis, Table CA 25

Figure SC-4c
Total Employment Growth
Sedgwick County



Source: Bureau of Economic Analysis, Table CA 25

as is illustrated in the right-hand column of Table SC-1. There we see that regional employment grew 9.0 percent during the period, slightly better than the state's 8.7 percent growth, but not quite matching the 11.4 percent increase in national employment. We also see that employment growth in Sedgwick County exceeded employment growth in the region, the state, and the nation; the 12.8 percent growth during the latter half of the decade represented a strong rebound from the 2.5 percent growth during the earlier period. However, the rest of the region did not perform significantly better during the 1985-1990 period than it did during the first half of the decade, growing a bare 1.1 percent.

Table SC-2
South Central Kansas
Sectoral Employment Growth

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1980-1985</u>	<u>1985-1990</u>
Mining	70.2	9.9	51.3	-27.4
Construction	49.6	-1.8	-1.9	0.1
Manufacturing	59.3	-9.5	-18.9	11.7
Transp. & Public Utilities	21.5	-2.1	-6.8	5.1
Wholesale Trade	29.6	0.3	-0.4	0.6
Retail Trade	23.8	16.4	8.2	7.5
Fin., Ins., & Real Estate	41.2	15.8	13.2	2.3
Services	44.1	36.4	13.5	20.2
Government	-1.8	23.4	7.0	15.4

The major cause for the poor performance of employment growth during the first half of the 1980s is not hard to discern when we look at Table SC-2; in a region that has 40 percent of the state's manufacturing jobs, manufacturing employment declined nearly 19 percent. In addition, we can see that recovery in the manufacturing sector during the latter half of the decade contributed significantly to the rebound discussed above. Also contributing to the rebound in employment growth during the last half of the 1980s were the 20.2 percent rate of growth in employment in the service sector and the 15.4 percent rate of growth of employment in government. However, those two sectors, along with the retail trade and the finance, insurance, and real estate sectors, had fairly strong rates of growth during the first half of the decade also, and yet the region did not prosper. It is difficult to escape the conclusion that, as the manufacturing sector in South Central Kansas goes, so goes the region.

Another prominent feature of Table SC-2 is the longer run contrast between the decade of the 1970s and the decade of the 1980s. In every sector of the private economy, employment grew significantly faster in the earlier period than in the latter one. Of the three sectors in which employment declined during the 1980s, Construction (-1.8 percent), manufacturing (-9.5 percent) and transportation and public utilities (-2.1 percent), the first two grew 50 or more percent and the third nearly 22 percent in the 1970s.

Population.

Annual population estimates based on Bureau of Economic Analysis Personal Income Series may not always agree U.S. Census estimates, however, they are used in calculating per capita personal income and provide a consistent historical trend. According to these estimates, the region outside of Sedgwick County gained only 800 people during the past decade. This represents less than one-half of one percent in a ten year period.

Slow job growth is probably the primary explanation for slow population growth. There is no reason to doubt that if jobs were plentiful in the region, the population would expand accordingly. Jobs in Sedgwick County provide a somewhat stabilizing force.

Earlier research has shown that 11.3 percent of manufacturing jobs in Sedgwick County are held by people living outside of the county.² This factor also highlights the importance of a sound highway system between Sedgwick County and surrounding communities.

Other Demographic Characteristics

In terms of income distribution, generally, the region has a higher percentage of households with relatively high incomes than the state as a whole. Age and education attainment levels do not vary as widely between Sedgwick County and the remainder of region as the economic data does. The age of the population in the region is slightly younger than in the state as a whole.

Educational attainment levels tend to be slightly lower than the state as a whole. This is

²Helga Upmeier and Carlene Hill Forrest, "Survey On In-Migration And Household Characteristics Of Manufacturing Employees In Sedgwick County Hired Between 1988 and 1991.", April 1992, (Institute of Public Policy and Business Research, University of Kansas and Center for Economic Development and Business Research, W. Frank Barton School of Business, WSU.)

probably due to opportunities for high paying jobs in the skill trades that have traditionally valued technical training as highly as a college education. In addition, the fact that the state's largest institutions of higher education are located in other regions of the state with smaller populations, distort the numbers somewhat.

South Central Kansas Counties

Some sense of the distribution of economic growth throughout the South Central region can be obtained by looking at employment and income growth in the individual counties in the region. Employment Growth for South Central Kansas Counties is shown in Table SC-3. A salient feature of that table is the degree of uniformity with which counties other than Sedgwick underperformed the state during the 1980s. Although Sedgwick County employment grew 15.7 percent during the decade, which was slightly faster than state employment grew, Butler County, which grew at only about two thirds of the state's rate, and Cowley, which grew at less than half the state's rate, were the next fastest growing counties. Of the remaining counties in the region, the fastest growing one was Harper, which grew at just less than one-fourth of the state's rate. During the last half of the 1980's the pattern was similar; only Cowley County among the counties outside of Sedgwick could muster an employment growth rate that was half of the state's.

Table SC-3
Growth of Employment by Place of Work
Kansas and South Central Kansas Counties

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1985-1990</u>
Kansas	29.1	14.4	8.7
Butler	31.1	9.0	3.7
Chautauqua	23.1	-12.5	-17.2
Cowley	22.4	6.6	4.4
Elk	9.7	-0.1	-6.0
Grenwood	6.9	-4.9	-2.5
Harper	1.9	3.3	1.3
Harvey	27.3	-1.3	1.4
Kingman	14.2	0.4	3.3
Reno	17.3	-0.2	-0.9
Sedgwick	38.9	15.7	12.8
Sumner	20.0	1.9	3.0

Table SC-4 shows the growth rate of real personal income for counties in the South Central region. In every county in the region, as well as in the state as a whole, the growth of real personal income was slower in the 1980s than it was in the 1970s. Although employment growth in Butler County was slower than in Sedgwick County during the 1980s, real personal income actually grew slightly faster than in Sedgwick County. With the exception of Butler and Sedgwick, however, no counties in the region could manage real personal income growth at much more than half the state's rate. Thus, the county by county comparison shows that the failure of the region outside of Sedgwick County to keep up with Sedgwick County has been a fairly general phenomenon.

Table SC-4
Real personal Income Growth
Kansas and South Central Kansas Counties

	<u>1970-1980</u>	<u>1980-1990</u>	<u>1985-1990</u>
Kansas	36.4	20.7	10.7
Butler	61.7	18.9	12.9
Chautauqua	15.9	0.7	0.2
Cowley	37.0	5.8	5.4
Elk	34.1	-3.4	-2.5
Greenwood	32.7	-4.5	2.2
Harper	20.6	7.1	6.6
Harvey	40.7	3.4	2.7
Kingman	27.3	11.7	4.7
Reno	34.4	10.4	5.6
Sedgwick	47.7	18.3	13.3
Sumner	51.5	9.9	7.5

Future Prospects.

The region faces the prospect of downturns in employment during 1993. During the past twelve months the three county metropolitan area of Wichita (Butler, Harvey, and Sedgwick counties) lost 2,200 manufacturing jobs. Boeing is expected to continue shrinkage aimed at improving cost competitiveness through 1993. The service sector of the economy cannot be expected to continue to support overall job growth with the loss of significant numbers of high paying manufacturing jobs.

Work being completed now at major aircraft plants is from orders placed prior to the national recession. Continued sluggishness in the U.S. economy, slowing growth in Europe and Asia, is causing orders to be delayed or cancelled. Boeing, for example, still has a strong, although slightly declining backlog. There are several positive signs, however. Work on the 777, the largest twin-engine airliner ever, should result in some recalls of blue collar workers to Boeing during 1993. In addition, a group of smaller manufacturers have formed a consortium called Kansas Manufacturers' Association to increase marketing efficiencies. They will, hopefully, as a result of working together, be more competitive as a group in worldwide markets.

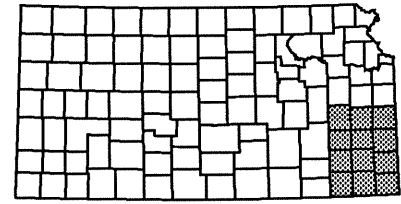
Finally, much of the current down-sizing is aimed at becoming more cost competitive in world markets. Being able to produce higher quality products with less overhead is a major competitive factor for manufacturing firms. Worldwide, demand for aircraft is expected to continue to grow throughout the first decade of the next century. Those companies which have positioned themselves to take advantage of market demand will find opportunities for growth.

In summary, the region will probably experience overall job declines during 1993. In the long-term however, opportunities in the aircraft and aviation related industries should increase and the region will be in a position to compete effectively.

Southeast Kansas

by

Robert B. Catlett



Introduction

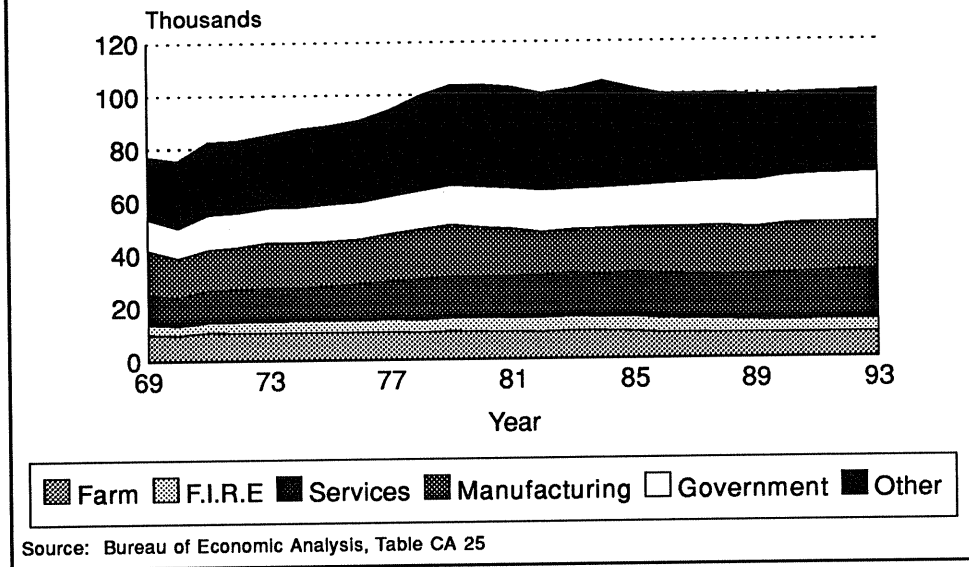
The economy of Southeast Kansas in the later half of the 1980's experienced some subtle changes in structure, but there was little change in the level of overall economic activity. While there were some year to year fluctuations in the level of regional employment and real income, their trends are remarkably flat. The region did not exhibit the same patterns of economic growth as the state and nation did over the same time period. The outlook for the region in the near-term is for continued sluggishness, while in the more distant future there are some formidable challenges which the region will likely face due to the age structure of the population.

The region consists of the twelve counties in the southeast corner of Kansas which are: Allen, Anderson, Bourbon, Cherokee, Coffey, Crawford, Labette, Linn, Montgomery, Neosho, Wilson, and Woodson counties. The income and employment data for the region were formed by aggregating the recently released county data from the U.S. Bureau of Economic Analysis. When featured in a comparison, data for the state and nation are from the same source (and adjusted by the same deflator in the case of income data) as that which formed the calculation of the regional data. All of the income data were adjusted for changes in the price level by the implicit price deflator for GDP. An exception is the nominal income data used in Figure SE-7, illustrating the distribution of income in the region and the state, which is from the 1990 census. The education and population figures are from calculations based on 1980 and 1990 census data.

Employment

The historical progress of the employment in various sectors in the region is shown in Figure SE-1. As the figure clearly illustrates, the 1970's was a period of fairly substantial employment growth, whereas the early 1980's was a period of very moderate and intermittent growth. After peaking in 1984 and then declining rather sharply in 1985, employment has remained nearly constant throughout the rest of the 1980's and into 1991. As the figure also shows, the forecast for the near future is for the level of employment in the region to remain roughly unchanged throughout 1993.

Figure SE-1
Employment
Southeast Kansas

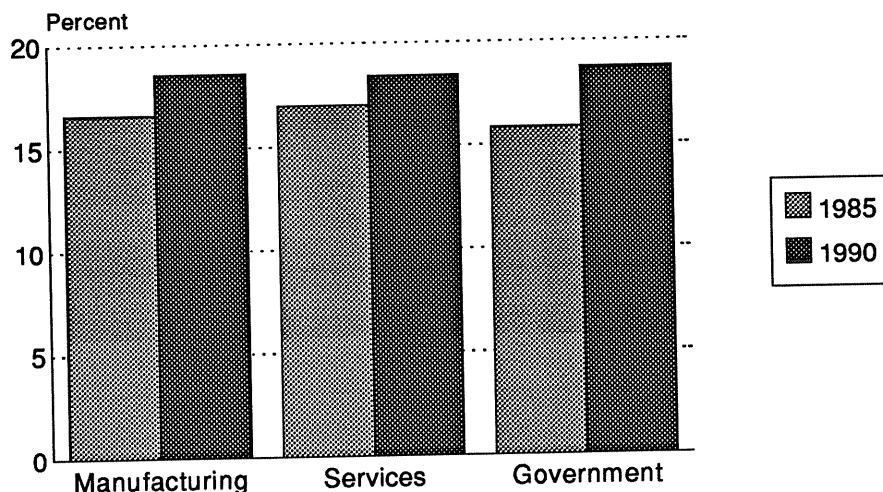


The stability in total employment since 1985 noted earlier is due to an expansion in the region's largest sectors, which almost identically offset the broad-based decline in most of the other sectors in the region. As shown in Figure SE-2, employment growth in the region was led by the largest three sectors: government, manufacturing, and services; each sector had approximately 18,000 employees in 1990, and together they accounted for 55.7 percent of total regional employment, compared to 49.4 percent in 1985.

Manufacturing was the largest source of employment in Southeast Kansas in 1969, when it accounted for 20.6 percent of total employment. Manufacturing has fluctuated since then as a source of employment, and it no longer is in a position of such dominance. By 1990 manufacturing accounted for only 18.6 percent of South-Eastern Kansas employment. (See Figure SE-3.)

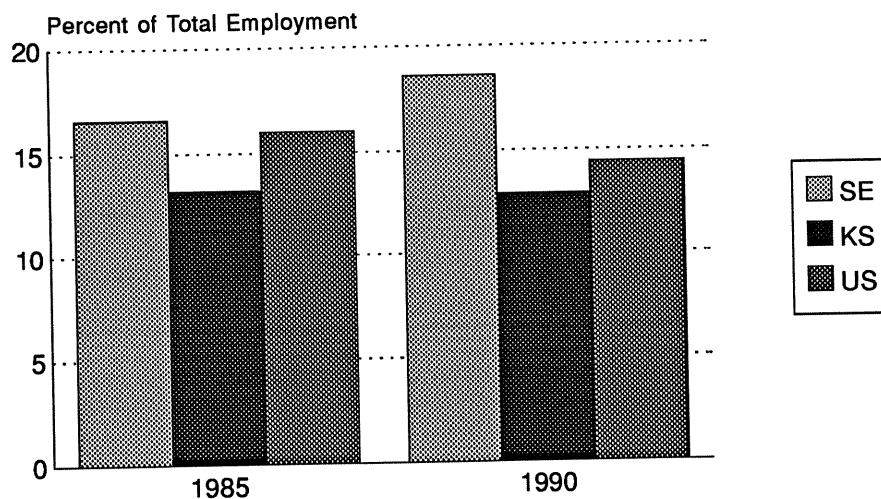
The regional decline of manufacturing employment as a share of total employment is not nearly as pronounced as it has been for the nation as a whole. While there has been virtually no change in manufacturing employment, total employment in the United States has increased by approximately 50 percent since 1969. Thus, the relative share of the nation's employment in

Figure SE-2
Southeast Kansas Employment Shares 1990
Manufacturing, Services, and Government



Source: Bureau of Economic Analysis, Table CA 25

Figure SE-3
Manufacturing as a Share of Employment
Southeast Kansas, Kansas, and the United States



Source: Bureau of Economic Analysis, Table CA 25

manufacturing industries fell from nearly 23 percent in 1969 to 14.4 percent in 1990. The dramatic decline in the proportion of U.S. employment in manufacturing is evident even over as brief a period as five years, as can be seen in Figure SE-3.

In contrast, in the Southeast Kansas region, manufacturing was the second fastest growing source of employment between 1985 and 1990, with an average annual growth rate of 1.3 percent. (See Table SE-2.) While it is important to note that manufacturing employment in the region has experienced some volatility, the recent trends are substantially different than either the state as a whole or the nation. Unfortunately, several factors make it unlikely that the region will sustain growth in this sector for an extended period in the future. Not only is there considerable competition among communities to attract firms in manufacturing industries, but it is also likely that international competition will continue to be a source of erosion in many manufacturing areas. Another important point to recognize is that since productivity has increased due to improved production technology, increases in the capital to labor ratio, and improvements in human capital, the same number of workers today can produce substantially more than would have been possible two decades ago because of productivity increases. Considering these forces, it is likely that fewer people will be needed nationally in manufacturing. Thus it seems prudent to conclude that the outlook for manufacturing in the region is for a modest decline in employment, although if past trends are any indication, the decrease is not expected to be as pronounced as in the nation or state.

The service sectors of the national, state, and regional economies have experienced virtually uninterrupted expansion over the past two decades, although service employment growth has been slower in the region than in the state or nation, especially since 1985 when an obvious slowing of the growth rate appeared. Table SE-1 shows the average annual service employment growth rates for the region (2.7 percent), state (3.8 percent), and nation (3.9 percent) from 1969 to 1985.¹ More recent growth rates are illustrated in Table SE-2 which shows that the region had an annual growth of slightly less than 1 percent in service sector employment, while the state and nation experienced approximately the same rates as exhibited in the earlier period, with growth rates of 3.7 and 4.1 percent respectively.

The service sector in the region, with 18.4 percent of total employment, lagged well behind the state (23.4 percent) and nation (27.4 percent) as a source of employment in 1990, as Figure SE-4 illustrates. In each case these percentages represent a larger share of employment than the

Table SE-1
Average Annual Growth Rates: Employment
Southeast Region, Kansas, United States
1969 - 1985

<u>Source</u>	<u>Southeast Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	-2.92%	0.18%	5.04%
Farm	0.02	-0.46	-0.72
Mining	9.28	7.17	4.77
Construction	4.81	2.22	2.02
Manufacturing	0.62	1.73	0.05
Transport. & Utilities	4.53	1.90	1.37
Wholesale Trade	2.89	4.57	2.68
Retail Trade	0.18	1.60	2.51
F.I.R.E.	2.75	4.30	4.05
Services	2.73	3.77	3.90
Government	1.93	0.73	1.00
Total Employment	2.07	2.12	2.04

Source: Bureau of Economic Analysis, Table CA 25.

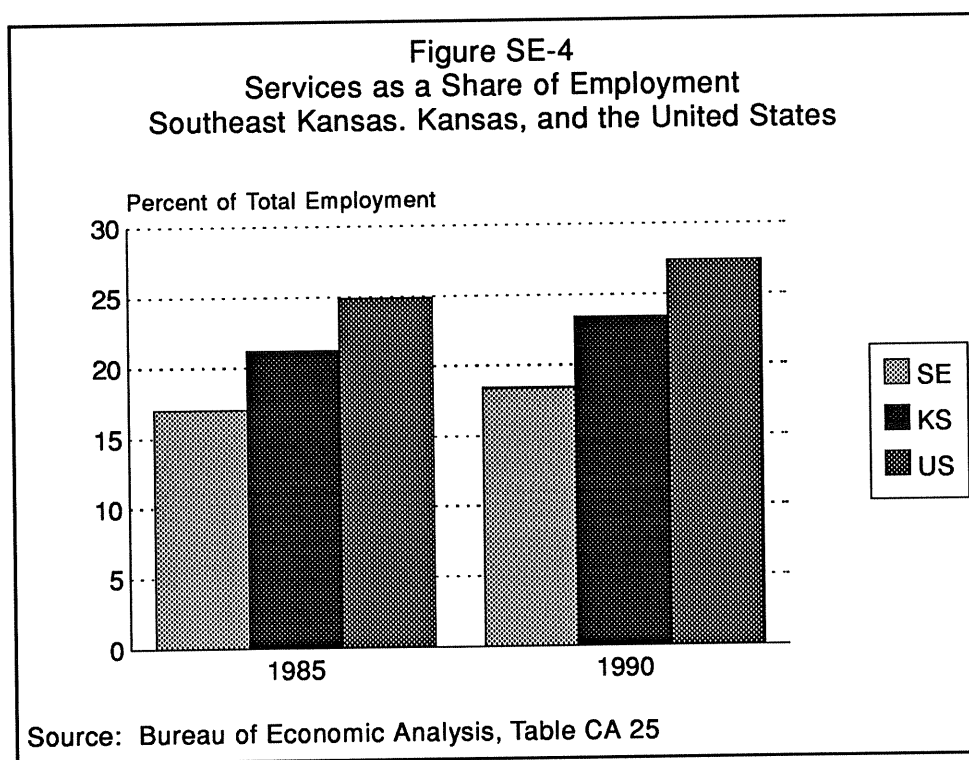
Table SE-2
Average Annual Growth Rates: Employment
Southeast Region, Kansas, United States
1985 - 1990

<u>Source</u>	<u>Southeast Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	-0.37%	4.36%	4.17%
Farm	-1.60	-1.77	-1.97
Mining	-10.49	-6.10	-4.73
Construction	-2.16	0.02	2.45
Manufacturing	1.25	1.30	0.26
Transport. & Utilities	-11.00	0.85	2.15
Wholesale Trade	0.25	1.00	1.93
Retail Trade	1.06	2.20	2.55
F.I.R.E.	-2.64	1.61	2.15
Services	0.96	3.71	4.10
Government	2.80	2.42	1.85
Total Employment	-0.38	1.77	2.26

Source: Bureau of Economic Analysis, Table CA 25.

service sector had previously accounted for. In 1969 the region had 14.1 percent of employment based in the service sector, while the state and nation had a somewhat larger emphasis in services with 16.1 percent and 18.2 percent respectively.

Employment in the public sector has experienced the fastest growth rate (2.8 percent) in the region since 1985 to become the largest source of employment by a slim margin. Employment by governmental entities rose from 15.8 percent of total employment in the region in 1985 to 18.7 percent by 1990. The growth rate and the relative share of employment in this sector are larger than those of the state and nation. Due to changes in such areas as school finance, modest growth in employment in the public sector might continue in the near term. Much of this expansion is likely to be generated by local governmental entities rather than by the state or national government as a source of regional employment.



Employment in retail trade has fluctuated around its 1969 employment level of 14,000 by no more than 800 to retain roughly the same level of employment (14,500) in 1990. Expanding employment in other sectors led to a relative decline in employment in the retail sector of the region since 1969, when it accounted for 17.2 percent of the region's employment. Employment

in retail trade in the state and nation has increased so as to retain a roughly constant share of total employment in the state and a growing share for the nation over the last two decades. It is important to note that no distinction is made between full-time and part-time employment in the county level data. If employment were measured by hours of work rather than number of people employed the results might paint a different picture. It is likely that the trend in retail firms has been towards a greater reliance on part-time employees in the retail sector. Thus retail trade employment measured by hours of work in this region may actually be declining to some extent. The relative decline would be even more dramatic than is apparent if this were the case.

Declining Employment

Substantial decreases in employment occurred in the latter half of the 1980s in transportation and public utilities; mining (including oil & gas extraction); finance, insurance, and real estate; and construction with each having an average annual rate of decline in excess of two percent. The farm sector along with agricultural services declined as well but at a slower rate. (See Table SE-2.) Outside the mining and farm sectors, the state and nation did not experience the erosion of employment opportunities that the region experienced in recent times; there has been substantial fluctuation over time in individual sectors which is evident by comparing Tables SE-1 and SE-2. The earlier time period stands in rather stark contrast to the more recent employment picture in the region. There was a broad-based expansion in employment over this earlier time period which is evident in Table SE-1. Only the tiny agricultural services sector (which includes veterinarians, fishery, forestry workers, and the like) in the region experienced a negative growth rate between 1969 and 1985. In fact, for the region, state, and nation, the growth rates of total employment were unusually similar at slightly over two percent per year over this time period. However, over most of the decade of the eighties, and especially since 1985, the region had several sectors that declined markedly.

The dramatic decline in employment in the transportation and public utilities sector led to a reduction in the relative share of the region's employment from 9.4 percent in 1985 to 5.1 percent by 1990. The latter figure is quite close to the state and national shares of employment in this sector. The large employment fluctuation was partially a result of employment changes resulting from the commencement of operation at the Wolf Creek Nuclear Power Plant in Coffey County and in the loss of a trucking and shipping firm in Bourbon County. While some leveling

off or slight rebound is likely in the near term, it is unlikely that this sector will regain the relative share it had in the mid 1980's.

Mining also experienced an unusually large rate of decrease, but due to its relatively small size it did not have as much of an impact on the region's economy as the transportation and public utility sector. Weak energy prices and lower incomes in the mining sector undoubtedly led to some of the decrease. This sector typically exhibits volatility as illustrated by the exceedingly large growth rate (9.3 percent) between 1969 and 1985, which is the fastest growth rate illustrated in Table SE-1. If energy prices drift upward, as might be expected eventually, there may be modest growth in this sector.

The financial sector including insurance and real estate (F.I.R.E.) experienced a decline in the region while there was expansion in the state and nation. Little change is expected in employment or the relative share attributable to this sector.

A decrease in construction employment was expected after completion of the nuclear power plant in Coffey county. Infrastructure projects are likely to reverse this trend in the near term. The forecast for construction employment shows the largest growth rate, but it is unlikely that such a rate will be sustained for an extended period of time. Construction is not characterized by stability and construction in the private sector is sensitive to interest rates; it is difficult to imagine that interest rates will decline much below their current levels.

The agricultural sector of the region, which is significantly larger as a source of employment in the region than it is in either the state or nation, has experienced a smaller decrease in employment than the state has over the last two decades. In fact, there was remarkable stability in agricultural employment in the region until 1985; the rate of decrease after 1985 was slightly smaller than the state or nation. There are likely to be fluctuations from year to year due to erratic income in this sector, but little growth is likely.

Employment Forecast

The 1993 employment forecast is shown in Table SE-3.² As can be seen, total employment growth is forecasted to continue its weak historical trend, growing just under 0.4 percent. Also consistent with recent history, two major sectors, services and government, are expected to exhibit more robust growth, 1.8 and 1.3 percent respectively. On the other hand, employment in the third major sector, manufacturing, is expected to decline 1.0 percent. Except

Table SE-3
1993 Employment Forecast
Southeast Region

<u>Source</u>	<u>Growth Rate</u>
Agricultural Services	2.0%
Mining	0.3
Construction	2.9
Manufacturing	-1.0
Wholesale Trade	0.3
Retail Trade	-0.7
F.I.R.E.	0.6
Services	1.8
Government	1.3
Total Employment	0.37

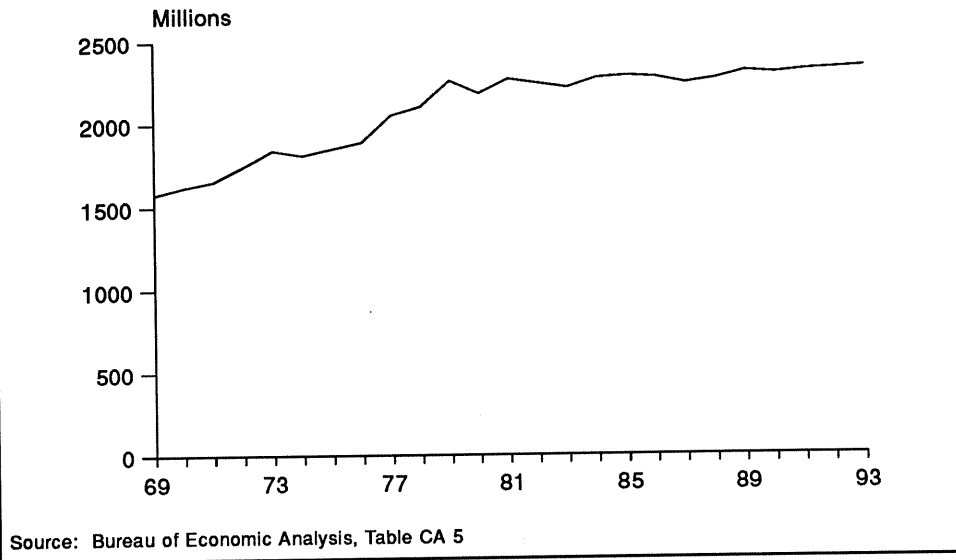
Source for historical data: Bureau of Economic Analysis, Table CA 25.

for the smaller agricultural services and construction sectors, which are expected to grow 2.0 percent and 2.9 percent, respectively, no other sector is expected to grow more than 0.6 percent.

Real Income

As Figure SE-5 shows, real personal income in the region exhibited a solid 2.52 percent annual growth rate between 1969 and 1985; most of this growth occurred in the 1970s. (See Table SE-4) After 1980 income growth virtually vanished, except for some short-term fluctuations. The growth rate between 1985 and 1990 was only 0.2 percent, as illustrated in Table SE-5. This absence of even modest growth in personal income suggests that the region has experienced an economic decline, especially since personal income in the region includes a large and growing emphasis on transfer payments. While the data does not permit an exact calculation of Gross Regional Product (GRP), it is likely that GRP has been declining for some time.

Figure SE-5
Southeast Kansas
Real Personal Income



Manufacturing has generated the largest source of income from employment in the region. The level of wages in manufacturing industries is commonly higher than in most other sectors of an economy, and this seems to be the case in the Southeast region. It is interesting that the increase in manufacturing jobs since 1985 did not raise the proportion of income attributable to manufacturing; instead, it declined slightly. Although the available data doesn't allow for a way to measure the wages of existing jobs in comparison with newly created ones, it is possible that the jobs created since 1985 are associated with substantially lower wages, and it is also possible that wages haven't increased as rapidly as inflation. Along with the forecast of a decrease in manufacturing employment is a decrease in income as well.

Expansion in the service and public sectors contributed to actual and relative increases in income from these sectors in the region. There are few reasons to expect these trends to change in the near term and since these are relatively large sectors, they may offset declines in other sectors.

The region, state, and nation each had 12 percent of its total income come from public sector employment in 1990. For the region, this reflected an increase in the relative importance

Table SE-4
Average Annual Growth Rates: Real Income
Southeast Region, Kansas, United States
1969 - 1985

<u>Source</u>	<u>Southeast Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	-5.05%	-1.47%	2.65%
Farm	-11.49	-5.82	-3.40
Mining	7.44	6.60	6.53
Construction	6.98	2.01	1.52
Manufacturing	0.93	2.80	0.85
Transport. & Utilities	3.44	1.90	6.18
Wholesale Trade	1.29	4.32	2.64
Retail Trade	-1.44	0.15	1.07
F.I.R.E.	0.85	3.17	2.80
Services	2.79	4.47	4.16
Government	2.32	1.20	1.41
Div., Int. and Rent	5.77	5.16	4.37
Transfers	3.94	4.39	4.77
Total Personal Income	2.52	2.66	2.67

Source: Bureau of Economic Analysis, Table CA 5.

of the sector compared to 1985, when it accounted for only 10 percent of total income. This trend did not occur on either the national or the state level, where the share of income from public sector employment remained constant. This is verified in Table SE-5. The relative increase in the region occurred because of the positive growth rate in this sector compared to total income which hardly changed. Thus public sector employment created relative income growth in the region even though the region's growth rate in the public sector was smaller than the rate for either state or nation.

The construction industry is subject to rather substantial swings in the level of activity; this seems to be especially pronounced in the Southeast region. The average annual growth rate for income from the construction industry between 1969 and 1985 was nearly 7 percent (see Table SE-4.) which is an unusually high growth rate. The average annual growth rate during the 1985 to 1990 time period was nearly as astonishing in the opposite direction at -5.8 percent. The construction of the extraordinarily large Wolf Creek Nuclear Plant in Coffee county in the earlier

Table SE-5
Average Annual Growth Rates: Real Income
Southeast Region, Kansas, United States
1985 - 1990

<u>Source</u>	<u>Southeast Region</u>	<u>Kansas</u>	<u>United States</u>
Agricultural Services	3.95%	8.37%	7.10%
Farm	-3.12	-1.89	5.3
Mining	-9.57	-7.60	-4.62
Construction	-5.77	-1.59	2.09
Manufacturing	1.35	0.81	0.76
Transport. & Utilities	-3.90	0.85	6.68
Wholesale Trade	1.38	1.40	3.44
Retail Trade	-0.15	1.58	2.61
F.I.R.E.	-1.79	2.71	4.87
Services	3.01	5.46	6.94
Government	1.85	2.41	3.25
Div. Int. & Rent	-0.62	2.96	4.20
Transfers	2.15	3.22	3.54
Total Personal Income	0.22	2.21	3.54

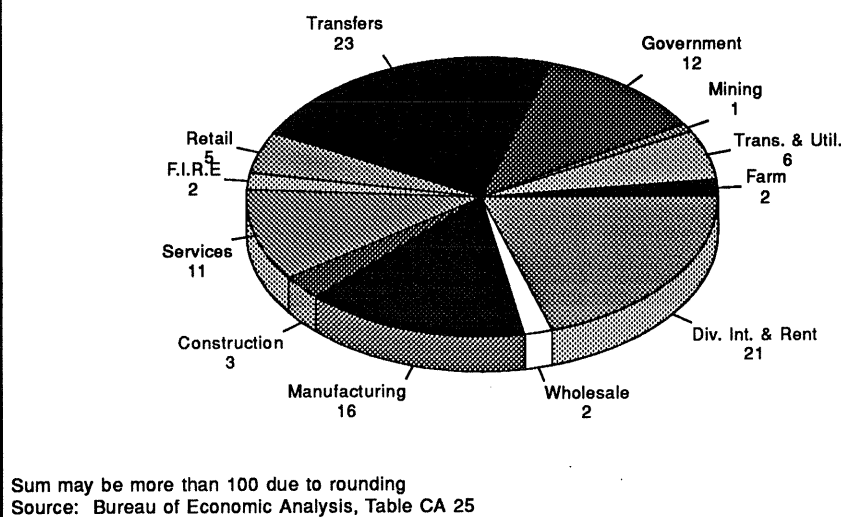
Source: Bureau of Economic Analysis, Table CA 5

time period contributed to the unusually high growth rates. For example, in 1983 Coffee county alone accounted for 10.5 percent of the total income from construction in the state; after 1986 this figure fell to around one-half of one percent.

As mentioned earlier, there is likely to be some sensitivity to interest rates for construction in the private sector. Certainly, other factors have an impact as well, such as the overall level of economic activity. In the region it is likely that expansion of the infrastructure will bring forth a rapid, but temporary, increase in income attributable to construction. If energy and farm prices drift upward, rather substantial growth in income may materialize in the mining and agricultural sectors, but these changes would necessarily be transitory.

Transfer payments account for the largest source of income in the region with approximately 23 percent of total income. (See Figure SE-6.) Most of these transfer payments are from the public sector, but in contrast to employment and income earned in the public sector, transfer payments are not indicative of output. Although transfer payments have exhibited slower growth rates than the state or nation since 1969 and since 1985, they have grown to a position of

Figure SE-6
Sources of Personal Income per \$100
Southeast Kansas 1990

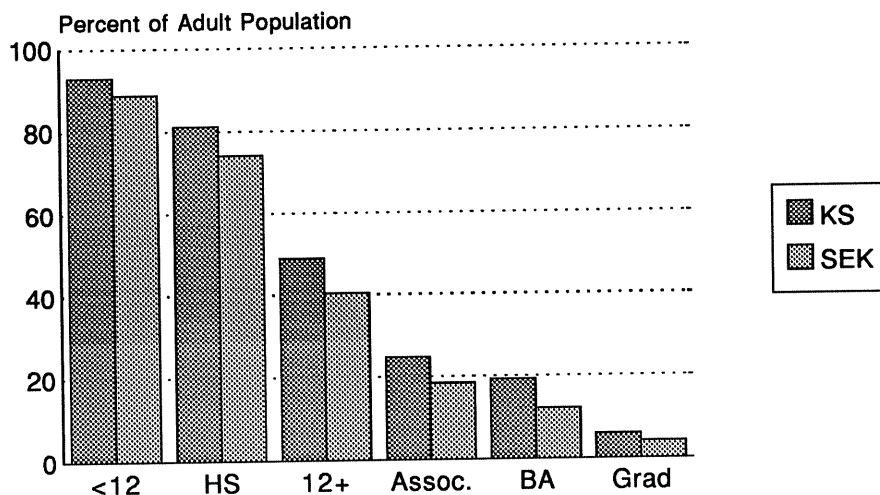


dominance in the region because the other sources of income combined have produced a decline in real income. (See Tables SE-4 and SE-5.) Transfer payments are especially common in areas where there is a large number of retired people, areas where substantial poverty exists, and in the agricultural sector; the region has a larger share of each of these than either the state or the nation. It is unlikely that transfer payments in the region will diminish, and it is possible that there will be significant increases toward the end of the century.

Along with transfer payments, dividends and interest are a significant source of income, especially among retirees. Due to the age structure of the region's population, the category of "dividends, interest, and rent" is relatively larger for the region than it is for the state or nation. The downward trend in interest rates has undoubtedly held back income growth from interest sensitive financial instruments. Over the longer term an upward drift in interest rates is likely which may produce some growth in interest income.

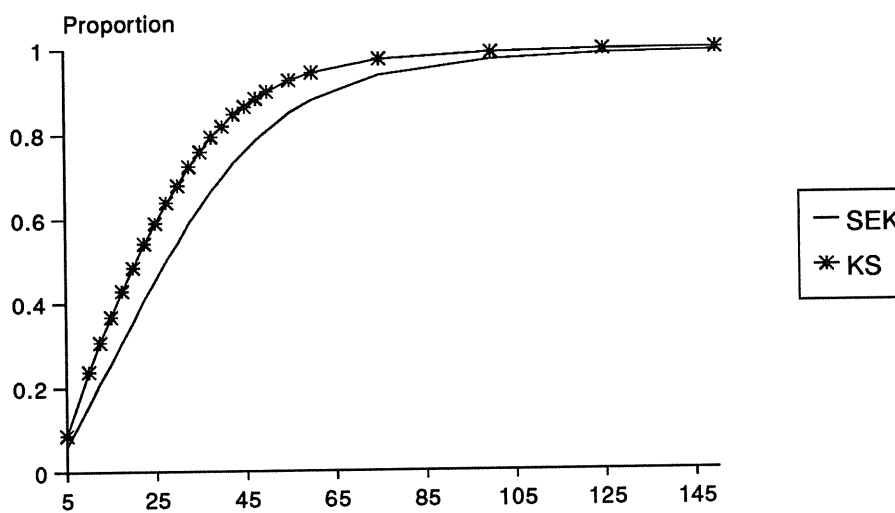
Although the broad categories of "wage and salary" employment and income are not reported in the tables, each experienced a small decrease from 1985 to 1990; employment declined at an average annual rate of 0.11 percent while income fell at a 0.27 percent rate. Income is obviously correlated with employment, but it is sometimes difficult to distinguish the

Figure SE-7
Education
Kansas and Southeast Kansas



Source: Bureau of the Census, 1990 Census of Population and Housing

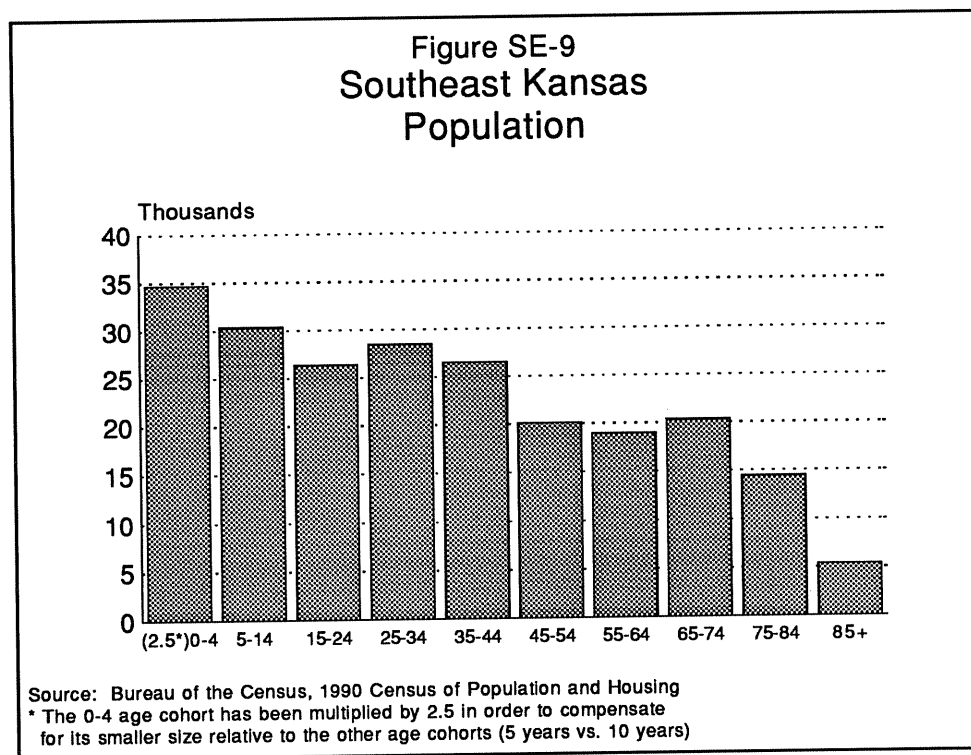
Figure SE-8
Southeast Kansas
Fraction of Households with Less than Indicated Income



Source: Bureau of the Census, 1990 Census of Population and Housing

direction of influence. Much of the discussion in the employment section sheds some light on the difficulties the region has experienced.

Education levels in the region trail the state as does household income. (See Figure SE-7.) In 1990, 49 percent of households in South-Eastern Kansas had less than \$20,000 of income, while only 36 percent of Kansas households had income levels less than \$20,000. Furthermore, 23.7 percent of the region's households had less than \$10,000, while the comparable figure for the state was only 15.8 percent. While there is substantially more poverty in Southeast Kansas than the state as a whole, households in general have less income than is typical in Kansas. (See Figure SE-8.



Finally, the age distribution of the population in the region shows an aging population with nearly the same number of people in cohorts of 45 to 54, 65 to 74, and 75 to 84 years of age in 1990. This is somewhat unusual. (See Figure SE-9.) The baby-boom after World War II is evident in the next two lower cohorts. Among the most striking comparisons of the 1980 and 1990 census data is the reduction of young adults. The number of 15 to 24 years old in the region declined by about 30 percent from 1980 to 1990. Given the reduction in births compared

to 1980 and the factors previously mentioned, it is likely the region will have a declining population as a secular trend.

Personal Income Forecast

The 1993 forecast for real personal income is shown in Table SE-6. In many ways it mirrors the employment forecast above. The forecasted rate of growth for total real personal income is about a half of a percent, a very modest increase. Again, two of the three largest sectors, services and government, are expected to grow significantly faster than the total, at 2.4 percent and 1.6 percent, respectively, and the third major sector, manufacturing, is expected to decline by just over one percent. Two smaller sectors, mining and construction, are predicted to have very strong growth rates, 5.7 percent and 7.1 percent, respectively. Two other sectors F.I.R.E. (finance, insurance, and real estate) and wholesale trade are expected to have above average growth rates, while agricultural services and retail trade are expected to face declines in real income.

**Table SE-6
1993 Real Income Forecast
Southeast Region**

<u>Source</u>	<u>Growth Rate</u>
Agricultural Services	-3.5%
Mining	5.7
Construction	7.1
Manufacturing	-1.1
Wholesale Trade	1.3
Retail Trade	-0.5
F.I.R.E.	2.0
Services	2.4
Government	1.6
Total Income	0.53

Source for historical data: Bureau of Economic Analysis, Table CA 5.

Counties of Southeast Kansas

The county level trends in employment and income for Southeast Kansas largely reflect those of the region. (See Table SE-7.) Most counties showed moderate to high growth during the 1970s but suffered low or negative growth rates in the 1980s. Just as for the region as a whole, employment in the government, service, and manufacturing sectors was the prime source of growth. The counties with the strongest performance in these sectors have generally experienced positive income and employment growth.

Cherokee, Crawford, Montgomery, and Labette were the fastest growing counties between 1985 and 1990. Cherokee county experienced high growth in the agricultural and government sectors during the 1970s. In the 1980s growth shifted to the manufacturing and service sectors, keeping overall growth slow, but steady. Crawford County experienced strong growth in government and Manufacturing employment throughout both decades, suffering only a moderate slow down in the early 1980s. Montgomery County lost employment in the manufacturing sector in the early 1980s but recovered between 1985 and 1990. Labette county gained employment in both manufacturing and government during the 1980s to show positive growth for the decade.

Two counties, Coffey and Bourbon, showed especially high growth during the 1970s, but suffered significantly negative growth rates in the 1980s. The erratic growth in Coffey County was a result of the completion of the Wolf Creek Nuclear Power Plant. Many shorter term construction jobs were created in the 1970s and then lost in the early 1980s when the plant was completed. The growth rate for the last half of the 1980s, however, indicates employment has begun stabilize for the county. Bourbon County suffered a significant drop in employment during the 1980s despite the fact it had strong growth in both government and manufacturing. The loss of a large trucking and shipping firm caused a large decline in both employment and income for the county. If manufacturing continues to grow, the future should look better for Bourbon County.

Table SE-7
Counties of Southeast Kansas

Total Employment Growth

	<u>1970-80</u>	<u>1980-90</u>	<u>1985-90</u>
Allen	29.9%	-0.8%	-2.2%
Anderson	1.5	1.0	-0.6
Bourbon	51.3	-24.5	-36.0
Cherokee	7.7	6.0	6.2
Coffey	126.2	-25.0	-3.1
Crawford	15.4	8.8	11.5
Labette	-5.0	7.4	4.1
Linn	29.2	0.8	0.2
Montgomery	30.6	-4.9	8.6
Neosho	21.5	0.7	-1.9
Wilson	14.4	-1.2	-5.8
Woodson	-3.2	-8.1	-8.7

Real Personal Income Growth

	<u>1970-80</u>	<u>1980-90</u>	<u>1985-90</u>
Allen	39.0%	-0.8%	-4.6
Anderson	59.4	1.3	-4.2
Bourbon	47.9	-5.9	-10.4
Cherokee	30.2	3.6	-4.0
Coffey	125.1	-5.7	-7.8
Crawford	34.1	10.7	4.5
Labette	10.8	11.5	1.3
Linn	41.0	17.2	2.0
Montgomery	40.6	-4.0	3.6
Neosho	33.6	0.4	-0.8
Wilson	20.0	-3.7	-5.9
Woodson	-15.9	8.2	2.7

Source: Bureau of Economic Analysis, Tables CA 5 and CA 25.

Conclusion

The economy in south-eastern Kansas has experienced difficulties over the last decade. Its structure and performance are different from that found in the state and nation. The public sector plays a key role in employment, and especially income, in the region. While no attempt was made here to derive a value for the Gross Regional Product, it is obvious that it has been falling in recent times, since regional income hasn't gone up in a perceptible manner since 1985. Excluding transfer payments (since they don't represent output) would result in declining income and output; recall that transfer payments were the largest single source of income in the region in 1990, accounting for 23 percent of the region's income. Transfer payments aren't the only component of personal income that must be taken into consideration when adjusting from personal income to calculate Gross Regional Product (GRP), but given their magnitude in this region, it is exceedingly unlikely that the other adjustments could offset the effect of transfer payments. It is difficult to point to a single area in the private sector which might pull the region out of its decline for an extended period of time. The service sector is a possibility, but generally lower wage rates in this sector would surely weaken the impact of expected employment growth on income.

Manufacturing has grown since 1985 and it could play a significant role if this expansion continues, although this seems unlikely because of a variety of factors including increased competition and productivity growth. None of the other areas in the private sector is large enough to fuel much expansion in the region, with the possible exception of agriculture. Increasing agricultural prices are not likely to persist for an extended period of time and it is unlikely that there will be a reversal in the trend of agriculture as a declining industry.

The age structure of the population suggests that the region's population is getting older. Part of this is attributable to the out-migration of young adults which is probably due to a considerable extent to economic conditions in the region. The general conclusion to be drawn from this analysis that the region's economy undoubtedly faces some difficult challenges in the future.

Notes

1. All of the growth rates are continuous growth rates calculated from the natural logarithms of each series and then using regression analysis. The results are not the percentage change between endpoints.

2. Autoregressive Moving Average (ARMA) models were used to formulate the forecasts illustrated for total real income and employment. The forecasts of real income and employment for each sector are from autoregressive models for each sector. The specification for each of these models is omitted due to space.

The model for real regional income is:

$$\text{RRY} = 2428395.4 - 0.2656823 (\text{MA}) + 0.912197 (\text{AR}) + E$$

(t) (8.62) (-1.14) (17.8)

—

$$R^2 = .94 \quad F = 162.3 \quad n = 21.$$

The model for regional employment is:

$$\text{REMP} = 103073.83 + 0.1324054 (\text{MA}) + 0.8724443 (\text{AR}) + E$$

(t) (17.96) (0.55) (14.67)

—

$$R^2 = .92 \quad F = 115.89 \quad n = 21.$$