

GOALS AND STRATEGY FOR KANSAS HUMAN  
RESOURCES POLICY

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January, 1984

Monograph # 15

Kansas Labor Market Research Series

Center for Human Resources  
Institute for Economic and Business Research  
University of Kansas

This research project on the Kansas labor market has been funded by the State of Kansas through the Job Training Partnership Act and is sponsored by the Kansas Council on Employment and Training and the Kansas Department of Human Resources. All views expressed are solely those of the authors.

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TABLE OF CONTENTS

	<u>Page</u>
Table of Contents . . . . .	i
List of Tables . . . . .	iii
List of Figures . . . . .	iv
List of Maps . . . . .	v
I. INTRODUCTION . . . . .	1
II. THE KANSAS ECONOMY, DEMOGRAPHICS AND LABOR MARKET. . . . .	2
Economic Structure . . . . .	2
Agriculture . . . . .	6
Population . . . . .	6
Demographic and Economic Interrelations. . . . .	11
Migration. . . . .	11
Age Structure. . . . .	22
Employment . . . . .	22
III. KEY LABOR MARKET ISSUES FOR KANSAS: GOALS AND STRATEGY FOR STATE HUMAN RESOURCES POLICY. . . . .	34
Problem No. 1 - Providing Sufficient Total Employment. . . . .	34
Conclusions Regarding Problem No. 1 - Providing Sufficient Total Employment. . . . .	38
Problem No. 2 - Achieving an Appropriate Geographic Distribution of Employment Growth . . . . .	39
Conclusions Regarding Problem No. 2 - Achieving an Appropriate Geographic Distribution of Employment Growth. . . . .	40
Problem No. 3 - Providing Jobs of a Quality Appropriate to the Education and Skills of the Labor Force . . . . .	41
Conclusions Regarding Problem No. 3 - Providing Jobs of a Quality Appropriate to the Education and Skills of the Labor Force. . .	43
Problem No. 4 - Providing Sufficient Appropriate Employment Opportunities for Women . . . . .	48
Conclusions Regarding Problem No. 4 - Providing Sufficient Appropriate Opportunities for Women . . . . .	49
Problem No. 5 - Providing Sufficient Appropriate Employment Opportunities for Youth . . . . .	50
Conclusions Regarding Problem No. 5 - Providing Sufficient Appropriate Opportunities for Youth . . . . .	53
Problem No. 6 - Coping with the Problems of Other Special, "Target" Groups in the Labor Force. . . . .	54
Conclusions Regarding Problem No. 6 - Coping with the Problems of Other Special, "Target" Groups in the Labor Force. . . . .	55

TABLE OF CONTENTS (con't)

	<u>Page</u>
Problem No. 7 - Alleviating Shortages of Skilled Labor . . . . .	56
Conclusions Regarding Problem No. 7 - Alleviating Shortages of Skilled Labor. . . . .	57
Problem No. 8 - Countering Potential for Decline in Productive Capacity of the Labor Force . . . . .	59
Conclusions Regarding Problem No. 8 - Countering Potential for Decline in Productive Capacity of the Labor Force . . . . .	60
IV. SUMMARY OF ISSUES AND OBJECTIVES . . . . .	61
Appendix A. . . . .	63

List of Tables

	<u>Page</u>
Table 1	Kansas and United States Gross Domestic Product by Industry, 1960, 1970, 1980 . . . . . 3
Table 2	Percentage of Civilian Income by Industries, Kansas and United States, 1960, 1970, 1980. . . . . 4
Table 3	Percentage of Total Employment Contributed by Different Sectors, Kansas and U.S., 1960, 1970, 1980. . . 5
Table 4	Population Growth Rates (for U.S., KS, NB, OK, MO). . . . 11
Table 5	Kansas Migration Summary of Covered Workforce Based on Social Security Continuous Work History Sample (1%) First Quarter of 1965-70-75 . . . . . 16
Table 6	Rank-Order of the Percentages of Migrants with Respect to Their Specific Covered Workforces by Sex-Race Group for Topeka, Wichita, and Kansas City SMSAs. . . . . 17
Table 7	Rank-Order of the Percentages of Migrants with Respect to Their Specific Covered Workforces by Age Group for Topeka, Wichita, and Kansas City SMSAs. . . . . 18
Table 8	The High-Technology Workforce in Kansas, Riley County and the Kansas SMSAs. . . . . 26
Table 9	Employment and Number of High Technology Establishments in Kansas, the Kansas Portion of the Kansas City SMSA, and the Wichita SMSA for 1981 . . . . . 27
Table 10	Recent Labor Force Participation Rates in Kansas and the U.S. . . . . 31
Table 11	Education Levels of Total Population, 1978-82, Kansas and the United States. . . . . 42
Table 12	Percentage Ratio of Incidence of CETA-Eligibility in Kansas and the United States, 1978-1982. . . . . 44
Table 13	General and Youth Unemployment Rates (in percent) for Kansas and the U.S., 1978-1982. . . . . 50

## List of Figures

	<u>Page</u>
Figure 1	Number of Farms in Kansas by Acreage Classifications . . . . . 7
Figure 2	Percentage of Total Agricultural Sales in Kansas by Farms Classified by Sales . . . . . 8
Figure 3	Indexes of Farm Input Use in Kansas. . . . . 9
Figure 4	Kansas Population as a Percent of USA Population. . . . . 10
Figure 5	Net Migration by Age Group in Kansas . . . . . 19
Figure 6	Top-Rated Factors for Locating in Kansas . . . . . 28
Figure 7	Top-Rated Factors for Expanding in Kansas. . . . . 29
Figure 8	Number and Percentage of CETA-Eligible Persons in Education Groups - Males and Females, Kansas and United States, 1978-82 . . 45
Figure 9	Number and Percentage of CETA-Eligible Persons in Education Groups - Males, Kansas and United States, 1978-82 . . . . . 46
Figure 10	Number and Percentage of CETA-Eligible Persons in Education Groups - Females, Kansas and United States, 1978-82 . . . . . 47

## List of Maps

		<u>Page</u>
Map 1	Population Growth for Farming and Nonfarming Counties in Kansas . . . . .	12
Map 2	Population Density of Kansas Counties, 1980. . . . .	13
Map 3	Statewide Economic Activity Kansas . . . . .	14
Map 4	Migration in Kansas (1960-70). . . . .	20
Map 5	Migration in Kansas 1970-80. . . . .	21
Map 6	Median Age of Population by County, 1980 . . . . .	23
Map 7	Percent of Population 65 Years and Over, 1980. . . . .	24
Map 8	Female Labor Force Participation Rate (1980) . . . . .	32
Map 9	Annual Average Unemployment Rates for CPS Unadjusted Rate. . . . .	33

## I. INTRODUCTION

Kansas has undergone significant change in recent decades with respect to the nature and composition of its economic structure and population. This has strongly affected its labor market and given rise to developments and trends that are likely to continue into the 1980s. These need to be recognized and addressed in the formulation of a human resources policy for Kansas.

The aims of this paper are: (1) to identify key problems and policy issues relevant to Kansas employment and training strategy, through analysis of Kansas labor market trends; and (2) to assist the state in setting goals and objectives for the Job Partnership Training Act (JTPA) and associated employment and training programs for FY 1985 and subsequent years.

The initial identification of problems, trends and issues in Redwood, et al. The Kansas Labor Market: Trends, Problems and Issues (1981) has been followed by a series of research reports on the Kansas labor market prepared by the Institute for Economic and Business Research for the Kansas Department of Human Resources and for the Kansas Department of Economic Development. These are listed in Appendix A. The specific objective of this paper is to consolidate our knowledge of the Kansas labor market on the basis of more extensive information now available, and in light of:

- the emphasis in JTPA upon job training as an investment in human capital, intended to increase employment and earnings potential and reduce welfare dependency;
- the development of JTPA performance standards and impact evaluation systems specific to the Kansas situation;
- the designation of state level responsibility and orientation for JTPA;
- the evaluation and likely trend of the state's economy and its economic strategy, in their national and international settings; and
- state commitment to high technology development as part of its overall economic development strategy.

This analysis consists of three major components. In Section II, relevant trends and characteristics of the Kansas economy, demographics, and labor market are identified. Section III describes the dimensions and nature of eight problem areas in the Kansas labor market, identifies appropriate issues in

relation to these focal points, and identifies possible goals and strategy for state human resources policy. Recommended goals and objectives are consolidated in Section IV.

## II. THE KANSAS ECONOMY, DEMOGRAPHICS AND LABOR MARKET

The Kansas economy has evolved from its earlier farm orientation towards a mixed economy, which, over time, is tending to resemble more closely the general overall economic fabric of the United States. With this evolution have come significant changes in Kansas' demographic pattern. Particularly significant appear to be substantial population declines, chronic outmigration, and an aging citizenry in many of the state's more rural, farm-oriented regions. Furthermore, this congruence towards the national economy has made the state's economy more sensitive and vulnerable to the vagaries of the national business cycle, as occurred in the 1980-82 recession.

### Economic Structure

Changes in the structure of gross state product, civilian income, and total employment by sector are illustrated, respectively, in Tables 1, 2, and 3. In all cases, they show a decline in the importance of the farm sector and a concurrent rise in the importance of manufacturing in Kansas. In almost all these instances, Kansas' economic pattern is converging to approximate that of the U.S., particularly as they delineate manufacturing's rise to accommodate the slack created by farming's decline. Nevertheless, combined farm and manufacturing employment in Kansas (21.69 percent of state total) remains significantly below that for the nation as a whole (26.78 percent) and employment in farming is projected to fall further in the coming years.<sup>1</sup>

Services and trade having been growing in Kansas as well, but, as their percentages approach the national average, it is likely that this growth is approaching a saturation stage. The problem posed for the state, therefore, is to continue to develop sources of economic growth to offset the farm sector's decline and the imminent leveling of the upsurge in trade and services.

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<sup>1</sup> e.g., Kansas Department of Human Resources: Kansas Annual Planning Information, 1983, p. 39.



TABLE 1

PART A

KANSAS GROSS DOMESTIC PRODUCT BY INDUSTRY  
(PERCENTAGE)

	<u>1960</u>	<u>1970</u>	<u>1980</u>
Farming	13.05	9.99	8.63
Manufacturing	19.08	19.48	20.20
Service	8.01	9.99	10.86
Government	13.07	14.74	11.33
Trade	15.33	17.38	17.11
Construction	4.95	4.38	5.06

Source: Kansas Department of Economic Development

PART B

UNITED STATES GROSS DOMESTIC PRODUCT  
BY INDUSTRY  
(PERCENTAGE)

	<u>1960</u>	<u>1970</u>	<u>1980</u>
Farming	4.01	2.64	2.91
Manufacturing	28.57	25.59	2.41
Government	9.35	11.73	11.80

Source: Survey of Current Business, 1981

TABLE 2  
PERCENTAGE OF CIVILIAN INCOME BY INDUSTRIES

	1960		1970		1980	
	USA	KS	USA	KS	USA	KS
Farm	3.45	13.90	2.24	8.30	1.45	5.40
Manufacturing	22.63	18.90	19.68	13.70	16.37	15.30
Service	7.39	11.00	8.84	9.40	10.12	10.37
Government	11.67	12.20	13.70	14.20	11.68	10.87
Trade	11.49	20.00	11.18	12.20	10.51	11.99
Construction	3.97	N.A.	4.13	N.A.	3.50	4.48
Other	39.40	24.00	40.23	42.20	46.57	41.59
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Bureau of Economic Analysis

TABLE 3  
 PERCENTAGE OF TOTAL EMPLOYMENT  
 CONTRIBUTED BY DIFFERENT SECTORS

	1960		1970		1980	
	USA	KS	USA	KS	USA	KS
Farm	9.72	14.20	5.99	9.02	4.34	5.48
Manufacturing	27.85	14.00	25.64	15.20	22.41	16.21
Service	11.33	8.40	15.40	11.64	19.76	14.68
Government	14.47	13.90	16.60	17.46	17.94	16.15
Trade	19.87	15.70	19.93	18.00	22.51	19.27
Construction	4.74	N.A.	4.68	N.A.	4.85	4.20
Other	12.02	33.80	11.76	28.68	8.19	24.00
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: Bureau of Labor Statistics

## Agriculture

Very significant changes have occurred in Kansas' agricultural economy. Over time, the state's farms have become fewer, larger, and more capital intensive. Figure 1 outlines the decline in farm numbers since World War II: as shown, the number of farms have declined in all acreage categories except the very largest, 500-999 acres and 1,000 or more acres.

Figure 2 employs a sales-size classification to measure the percentage of total agricultural sales from each class. It shows that less than one percent of the state's farms (those with \$500,000 or more in sales) accounted for almost half of the state's agricultural output for 1978--the most recent year for which such comprehensive data is presently available. Finally, farm input use over time (Figure 3) exhibits an increasing capital intensity and the dramatic rise in chemical use. Equally important is the decline in labor employed on the farm. Interestingly, land input remains remarkably constant--tending to contradict the myth that land is leaving agriculture. Quite clearly, it is labor which is leaving.

These changes are of considerable significance to Kansas. In one respect, as farms become larger and more capital intensive, agriculture tends to become less stable and easily damaged by adverse price movements. Another impact is the clear and present threat to the vitality of the state's most rural counties: as resources leave farming, no alternative employment opportunities present themselves in farm-dominated communities. The result is a migration of resources from the affected area and a weakening of its economic structure.

## Population

Kansas' slow population growth rate over the past three censuses is shown in Table 4. In all cases, Kansas' growth has been significantly below the overall U.S. rate. (Growth rates for three of the state's neighbors are included for perspective.) The result of these many years of below average population growth is indicated in Figure 4 which shows that Kansas population as a percent of the national total has declined with every census since 1900. At present, the state comprises about 1.0 percent of the national population after being nearly 2.0 percent at the turn of the century.

FIGURE 1  
 NUMBER OF FARMS IN KANSAS  
 BY ACREAGE CLASSIFICATIONS  
 1945-1978

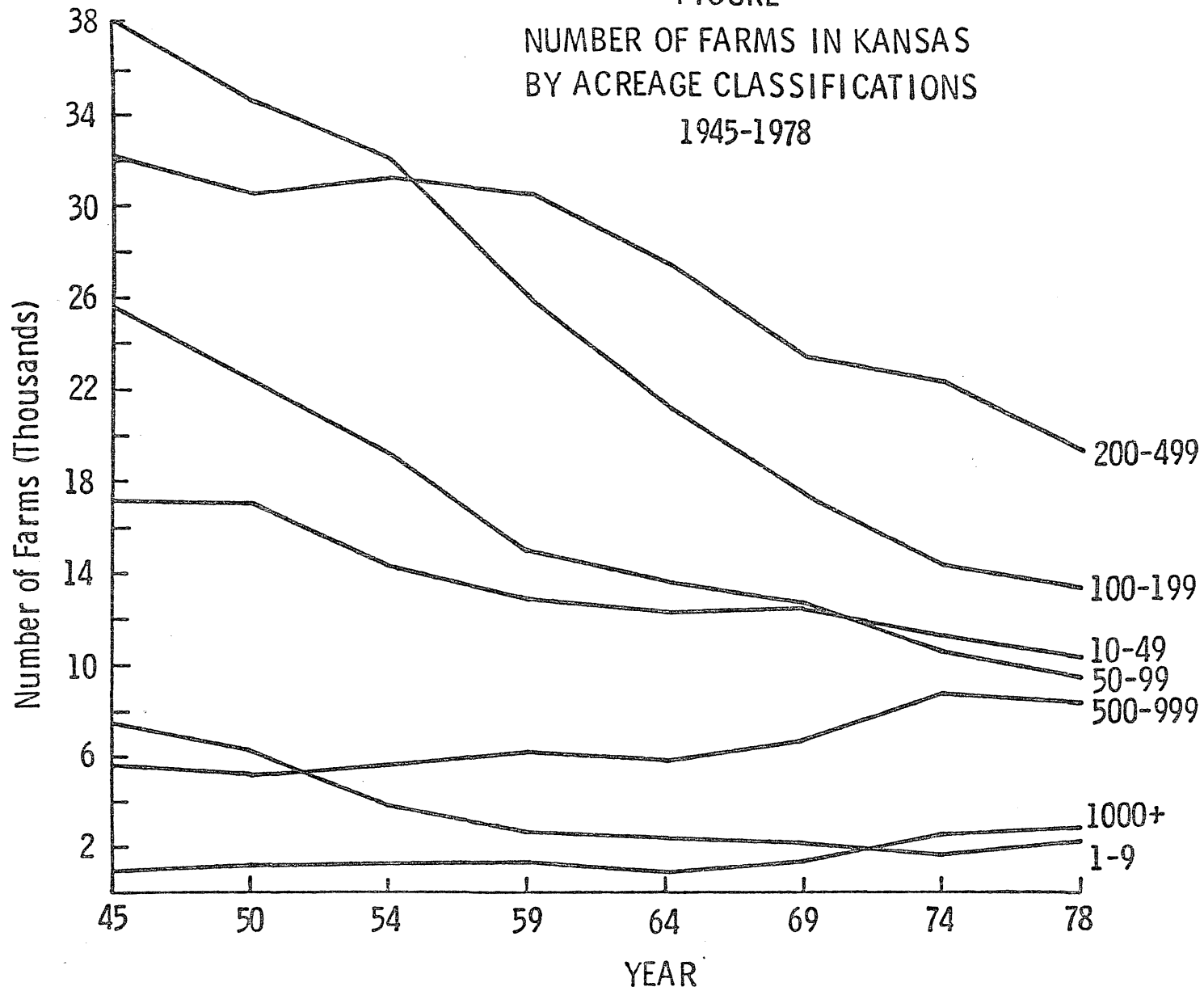
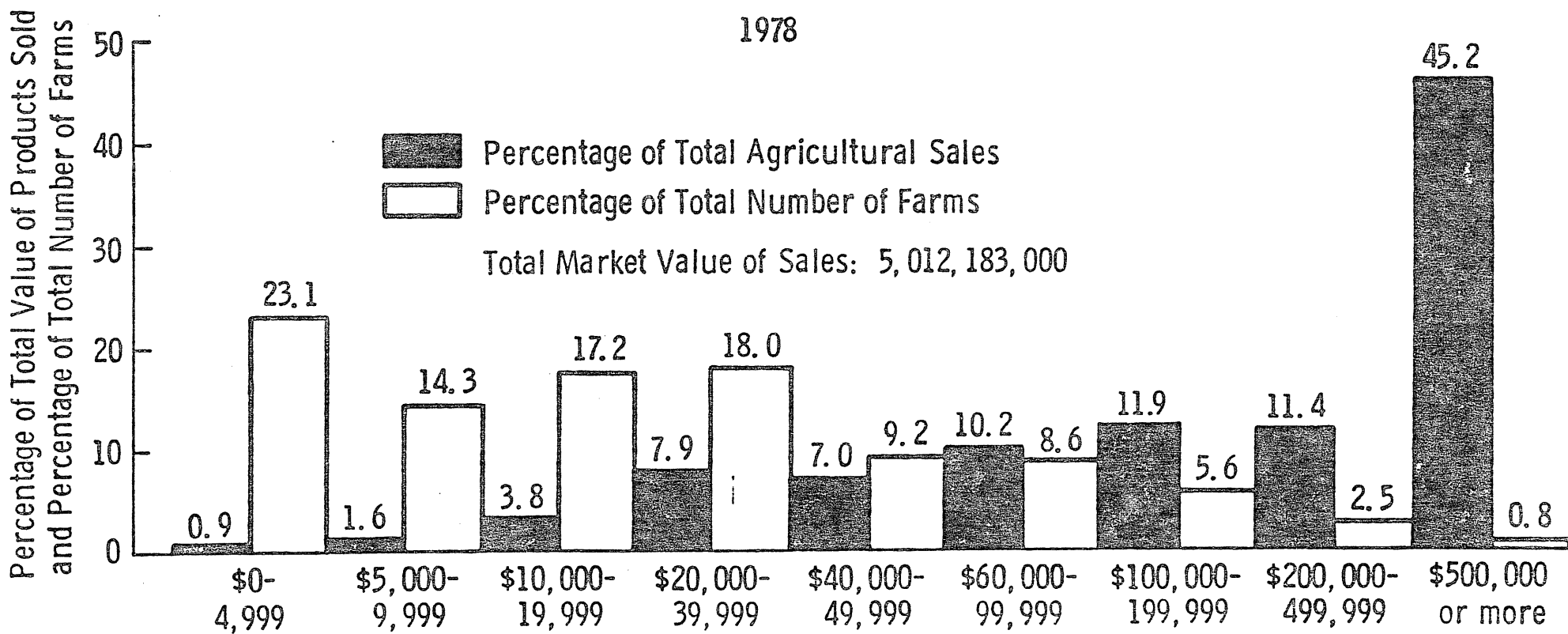


FIGURE 2

PERCENTAGE OF TOTAL AGRICULTURAL SALES IN  
KANSAS BY FARMS CLASSIFIED BY SALES  
1978



INDEXES OF FARM INPUT USE IN KANSAS  
1967 = 100

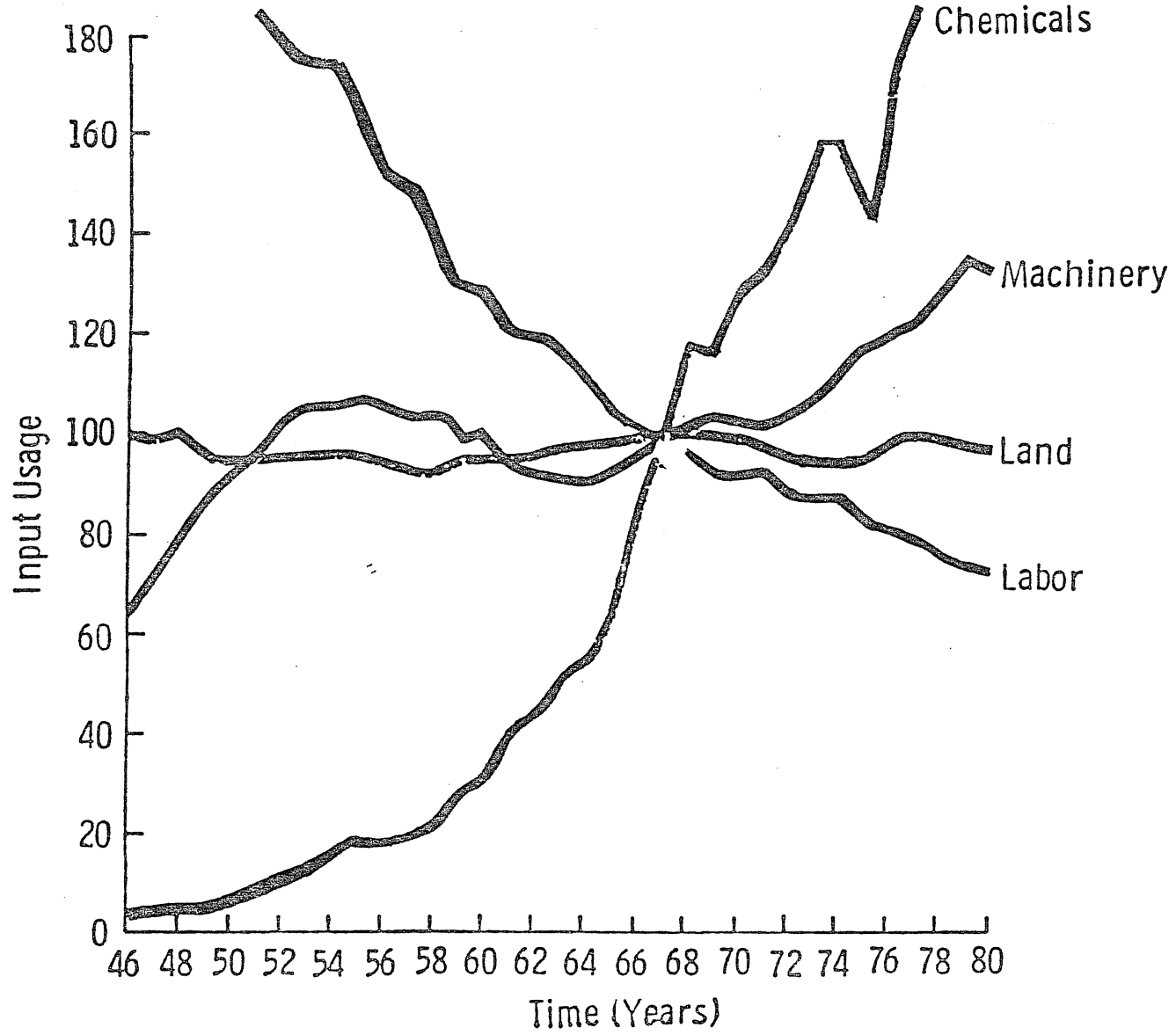


FIGURE 4

KANSAS POPULATION AS A PERCENT  
OF USA POPULATION

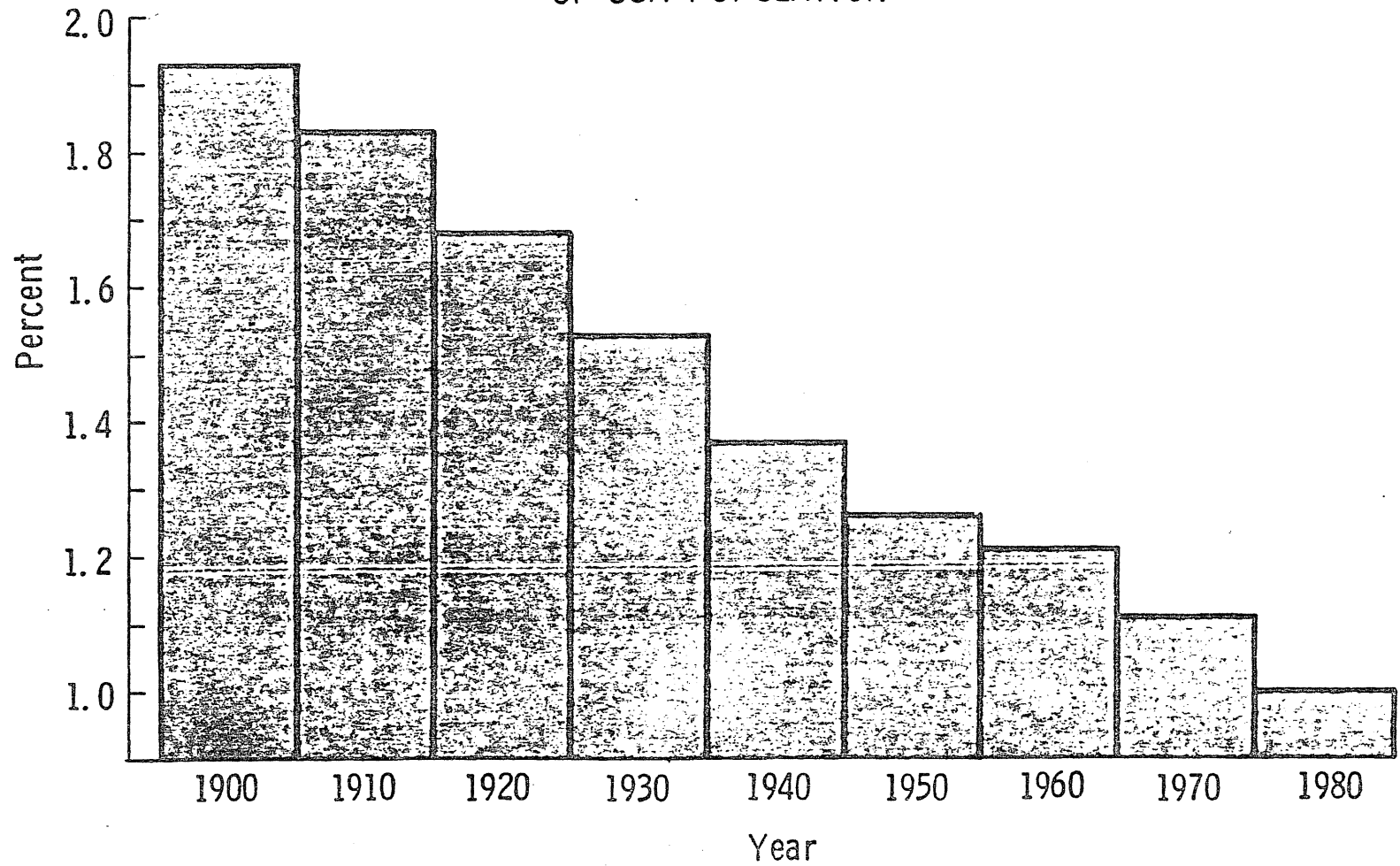




Table 4

Population growth rates (in percentage)

Period	U.S.	Kansas	Nebraska	Oklahoma	Missouri
1950-60	18.5	14.4	6.5	4.3	9.2
1960-70	13.2	3.2	5.2	9.9	8.3
1970-80	11.9	5.1	5.7	18.2	5.1

Source: Bureau of the Census

### Demographic and Economic Interrelations

There is of course a close link between demographic and economic characteristics and trends within Kansas. The earlier discussion of farm structure suggested that present structural trends in farming may cause population declines in rural counties. Map 1 identifies a close correlation between population declines between 1970-80 and those counties which are farm oriented. Noteworthy is that the pattern is less apt to hold for those agricultural counties near urban centers, for example, around Wichita, than for those more distant from metropolitan areas. The reason is that the urban centers provide off-farm employment for those who quit farming or farm only on part-time basis.

Map 2 details population density in Kansas and reveals the concentration of population in the state's eastern region. The bulk of economic activity is located in this region, and in particular the northeast as well as in a corridor in central Kansas along I-35 and along the Kansas turnpike. (Map 3).

The proportion of urban population of Kansas has increased from 22.4 percent in 1900 to 66.7 percent in 1980. And the 68 "rural agriculture" counties contained only 28 percent of the population in 1980, while the remaining 37 counties had 72 percent.

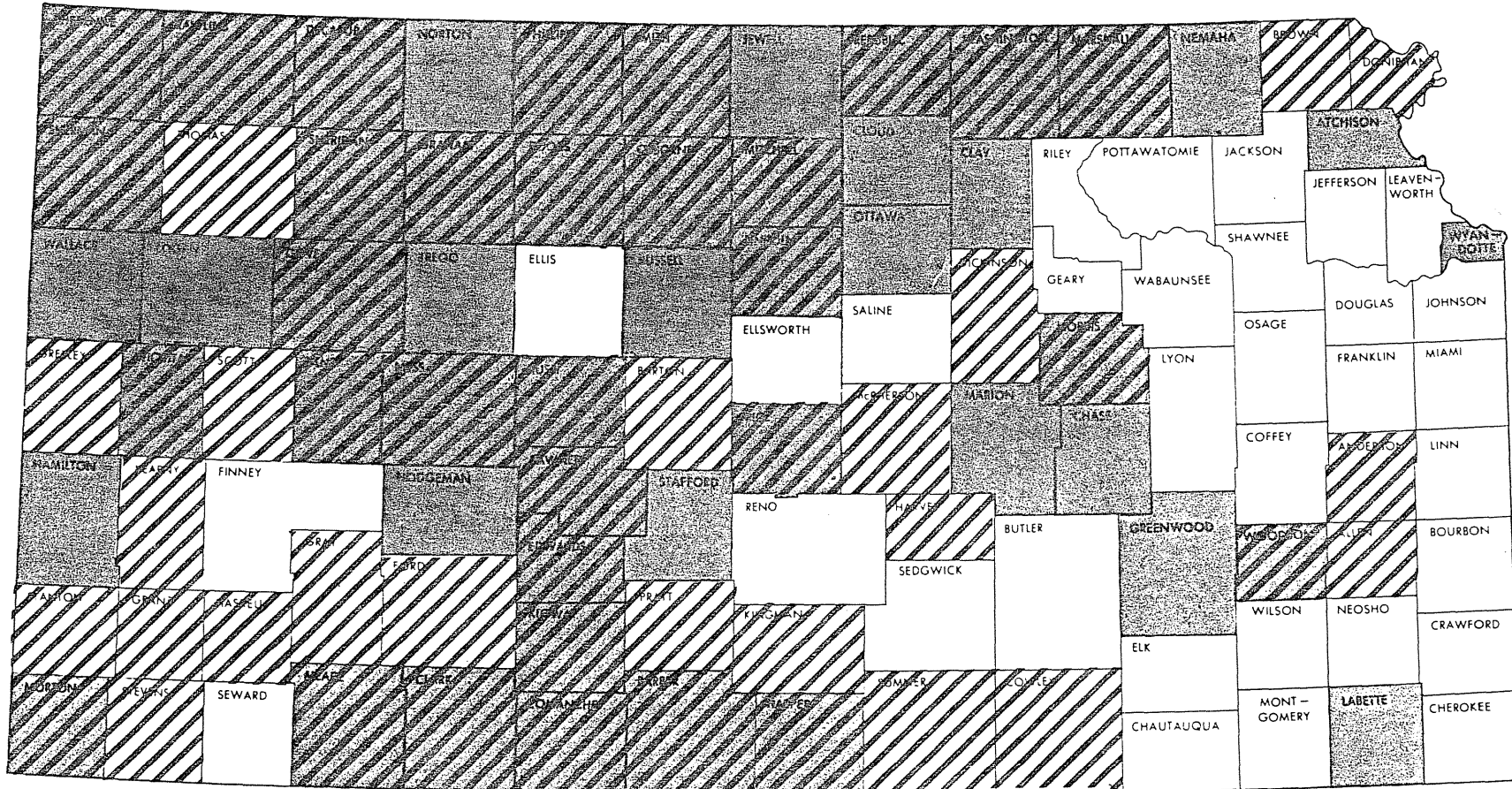
In essence population movement and distribution are patterned towards economic opportunity which, in Kansas, is presently concentrated in the east and south central portions of the state.

### Migration

The Kansas economy and population are affected by both interstate and intrastate migration. In general, the work force moves to seek its greatest opportunity, be that in terms of enhanced earnings or job choice. Furthermore

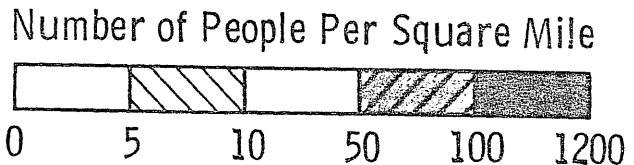
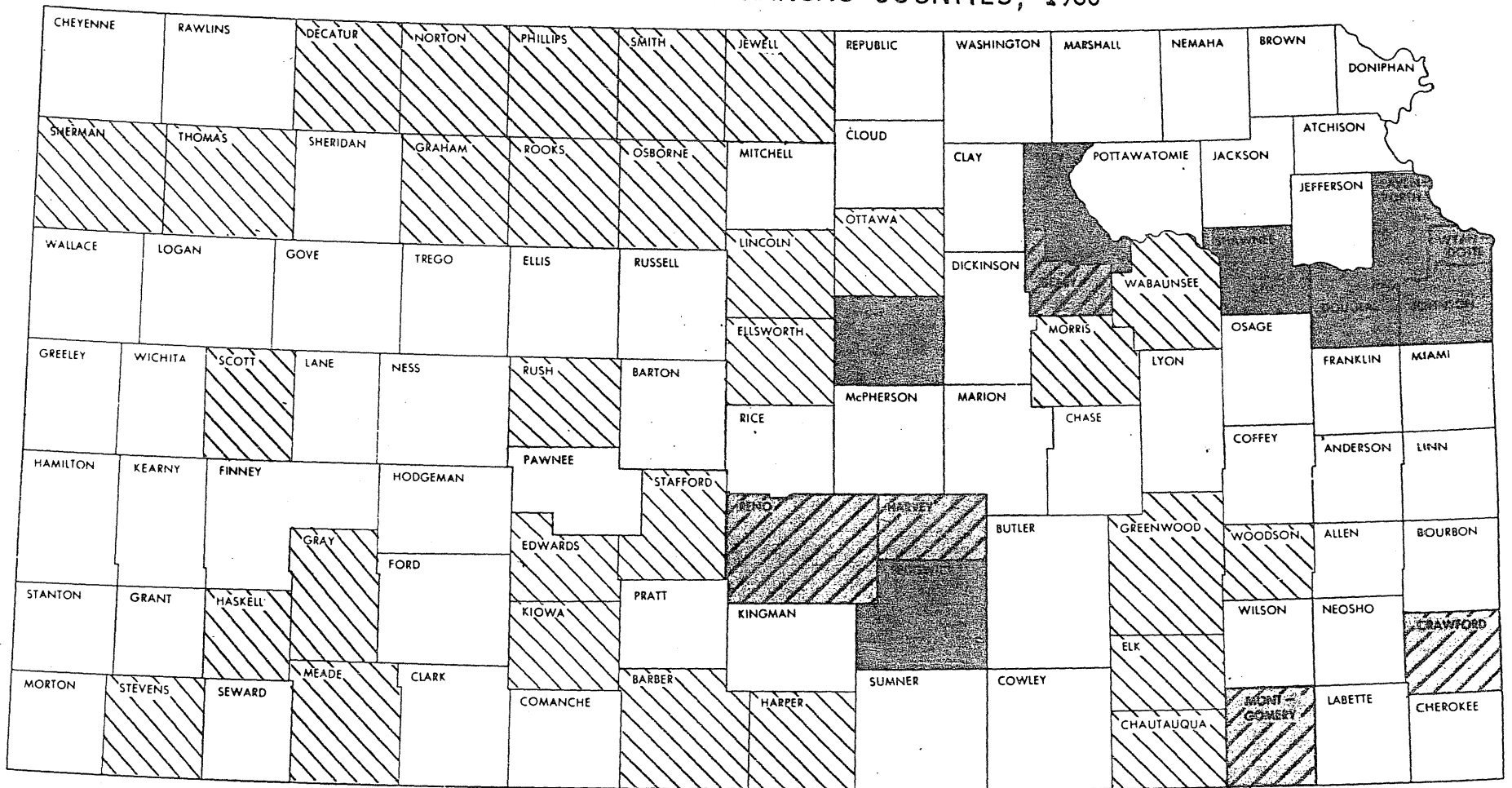
# MAP 1

## POPULATION GROWTH FOR FARMING AND NONFARMING COUNTIES IN KANSAS



- Counties Which Lost Population 1970-80
- Counties with Above Average (91.2%) Land Area in Agriculture

# MAP 2 POPULATION DENSITY OF KANSAS COUNTIES, 1980





the primary influence can be either a "pull" (higher wages and more interesting jobs elsewhere) or a "push" phenomenon (lack of opportunity in the current situation) and often both elements are present, as would seem to be the case with Kansas.

Census figures show that Kansas experienced net outmigration of 130,473, or 6.1 percent of the base population, during 1960-70 and 31,617, or 1.4 percent of base, during 1970-80. An analysis of migration among workers (Monograph #2, Appendix A) for the period 1965-75 shows how extensive the movement of Kansas workers is, 12-13 percent of the covered (Social Security) work force comprising immigrants, 13-15.5 percent migrating out of state, and a further 12-13 percent moving intrastate (Table 5). While a large amount of migration is among neighboring states, immigrants tended to come from surrounding Plains Regions states and states to the east, while outmigrants mostly went to the south west and west. Most important of all, this study confirms that interstate migration consists largely of higher paid/higher skilled workers and, further, that outmigrants will experience a substantially greater improvement in earnings than those who remain in the state.

A further study of worker mobility (Monograph # 10) for the period 1971-73 demonstrates that there are significant variations in the sex, race and skill patterns of migration to and from the major urban areas (Wichita, Kansas City, and Topeka SMSAs), of the state (Tables 6 and 7). In general, each SMSA 'turned over' 10-15 percent of its work force (proportion moving out and replaced) over the two year period; migrants were more often male than female; the 25-34 and 19-24 age groups constituted over half of all migrants in all three SMSAs; and while whites were the largest group, black and 'other' migrants represented greater percentages of their work forces. Significantly, the analysis revealed substantial movement of lower paid workers as well as the higher paid, indicating the existence also of strong "push" influences, that is, migration motivated by lack of opportunity at the home base.

Further confirmation of the "brain drain" problem, i.e., the exit of large numbers of young, well educated Kansans, is provided by the age distribution of net migration for the period 1960-70 (1970-80 not yet available) in Figure 5.

Net migration for each Kansas county is shown in Maps 4 and 5 respectively for the periods 1960-70 and 1970-80. The vast majority of counties in the

TABLE 5

KANSAS  
MIGRATION SUMMARY OF COVERED WORKFORCE  
BASED ON SOCIAL SECURITY CONTINUOUS WORK HISTORY SAMPLE (1%)  
FIRST QUARTER OF 1965-70-75\*

	1965-1970					1970-1975				
	Thousands Workers	% Total	1965 <sup>1</sup> Wages	1970 <sup>2</sup> Wages	% Change Wages	Thousands Workers	% Total	1970 <sup>1</sup> Wages	1975 <sup>2</sup> Wages	% Chang Wage
Initial Covered Work Force	565.4	100.0	4,066			653.0	100.0	5,449		
Inmigrants	68.2	12.1	4,779	7,340	53.6	85.7	13.1	6,126	9,727	58.
Outmigrants	86.8	15.4	4,349	7,509	72.6	83.1	12.7	5,908	9,534	61.
Net Migration	-18.6	-3.3				2.6	.4			
16 Laborers moved within ind. in the state	72.6	12.8	3,150	5,542	75.9	81.0	12.4	3,944	7,257	84.
Entered Covered Work Fo	249.3	44.1		3,297		245.2	37.5		4,650	
Left Covered Work Force	147.0	26.0	3,005			203.1	31.1	4,183		
Final Covered Work Force	653.0	115.5		5,449		686.3	105.1		7,686	

\* It includes all workers and all industries

1: 1965 (1970) wage of inmigrants is the average wage of those who were outside Kansas in 1965 (1970) but moved to Kansas during 1965-70 (1970-75).

1965 (1970) wage of outmigrants is the average wage of those who were in Kansas in 1965 (1970) but moved out of Kansas during 1965-70 (1970-75).

2. 1970 (1975) wage of outmigrants is the average wage of those who were in Kansas in 1965 (1970) but moved out of Kansas during 1965-70 (1970-75).

1970 (1975) wage of inmigrants is the average wage of those who were outside Kansas in 1965 (1970) but in Kansas in 1970 (1975).

Source: Continuous Work History Sample.

Table 6

Rank-Order of the Percentages of Migrants with Respect  
to Their Specific Covered Workforces  
by Sex-Race Group for Topeka, Wichita, and Kansas City SMSAs<sup>†</sup>

Sex-Race Group	<u>INMIGRANTS</u>			<u>OUTMIGRANTS</u>		
	Topeka	Wichita	Kansas City	Topeka	Wichita	Kansas City
White males	4	3	2	3	3	3
Black males	2	2	4	4	2	4
Other males <sup>§</sup>	3	1	1	1	1	2
White females	5	5	3	5	4	5
Black females	1	4	6	6	4	6
Other females <sup>§</sup>	6	6	5	2	6	1

<sup>†</sup>as represented by the percentage that a given group of migrants represents of its respective sex-race group's covered workforce--i.e. percent of covered workforce from Tables 2, 14, and 26. For example, black female inmigrants in Topeka represented a higher percentage of their respective covered workforce than any of the other five sex-race groups.

<sup>§</sup>racial groups other than blacks or whites.

Source: determined from Tables 2, 14, and 26, Monograph #10, Appendix A.

Table 7

Rank-Order of the Percentages of Migrants with Respect  
to Their Specific Covered Workforces  
by Age Group for Topeka, Wichita, and Kansas City SMSAs†

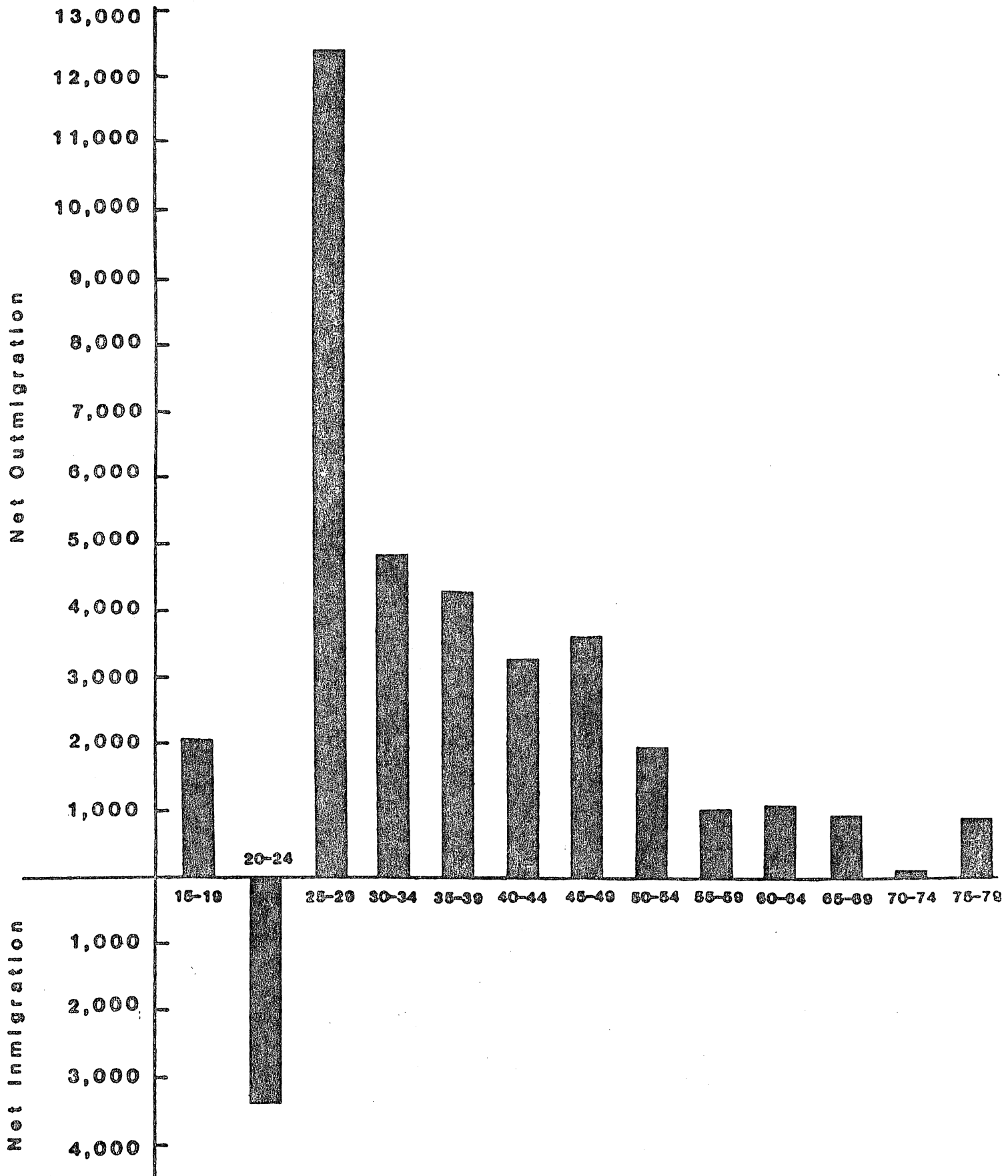
Age Group	<u>INMIGRANTS</u>			<u>OUTMIGRANTS</u>		
	Topeka	Wichita	Kansas City	Topeka	Wichita	Kansas City
Less than 19	5	5	6	6	6	5
19-24	1	2	1	1	2	2
25-34	2	1	2	2	1	1
35-44	3	3	3	3	3	3
45-64	4	4	4	4	4	4
65 and over	6	5	5	5	5	6

† as represented by the percentage that a given group of migrants represents of its respective age group's covered workforce--i.e. percent of covered workforce from Tables 3, 15, and 27. For example, immigrants 19-24 years of age in Topeka represented a higher percentage of their respective covered workforce than any of the other five age groups.

Source: determined from Tables 3, 15, and 27, pp. 14, 51, and 87, Monograph #10, Appendix A.



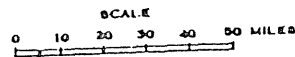
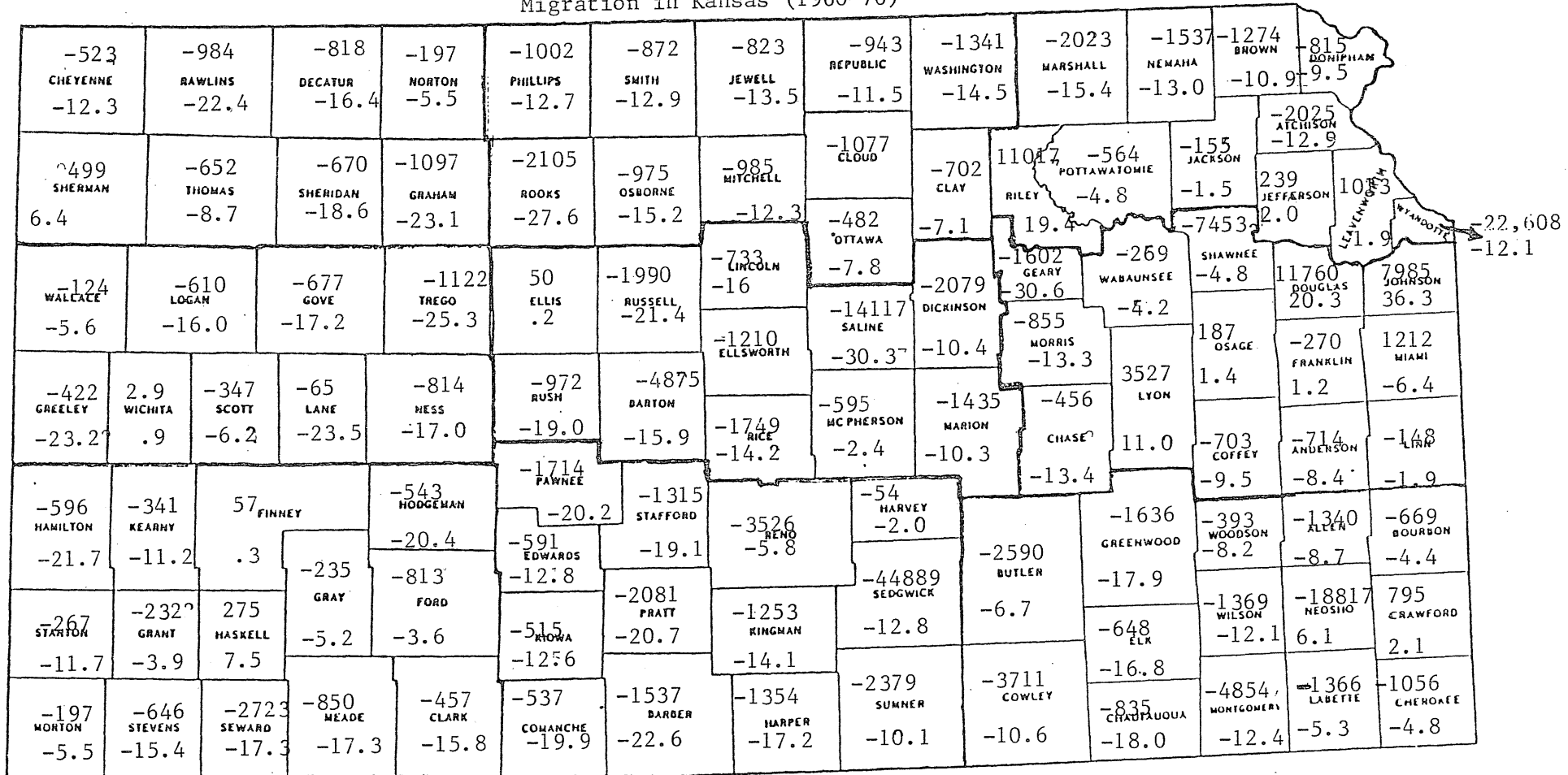
**Figure 5 : NET MIGRATION BY AGE GROUP IN KANSAS  
(1960-1970)**



Source: Bureau of Census

Map 4  
KANSAS

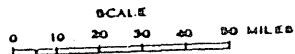
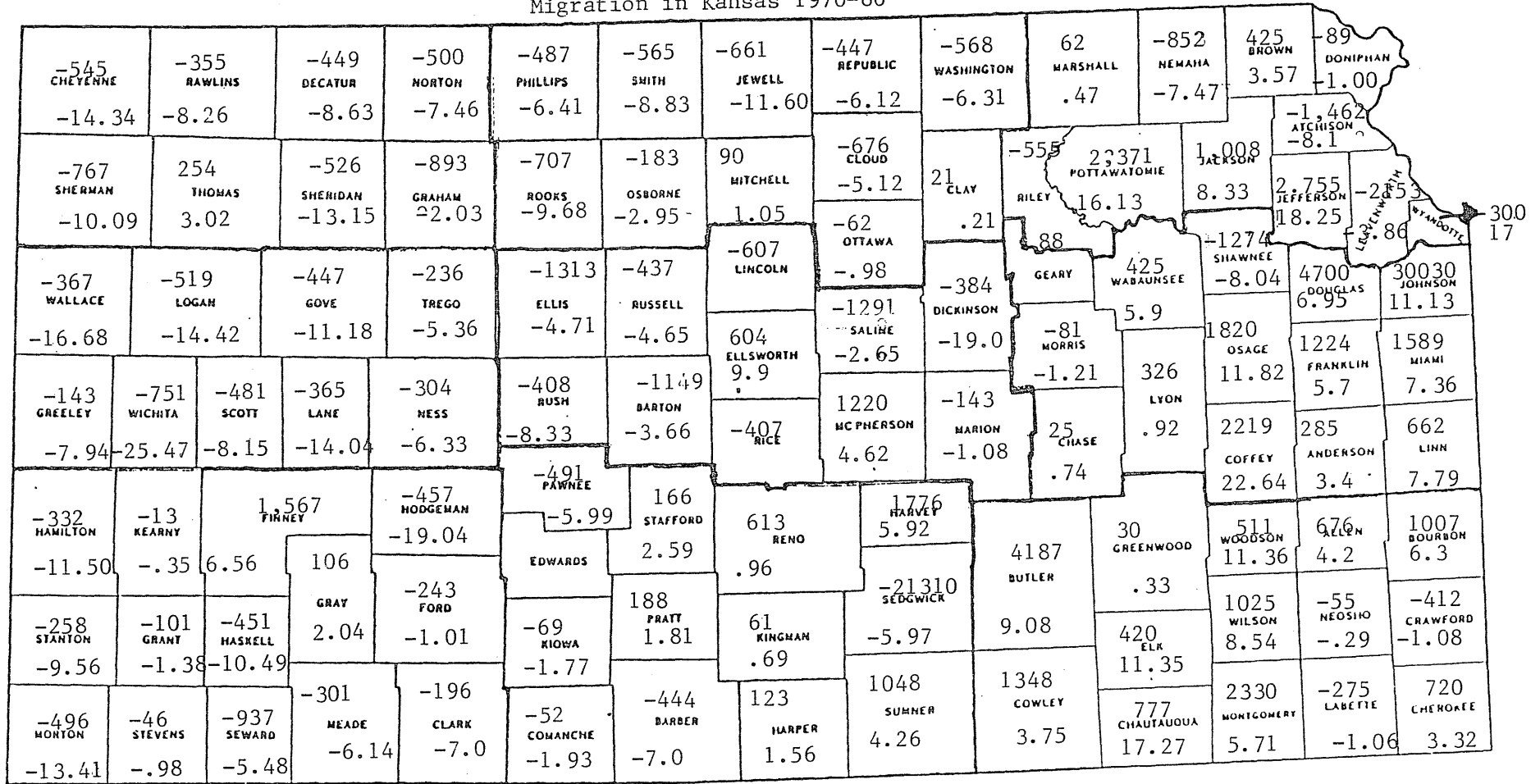
Migration in Kansas (1960-70)



U. S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS

Map 5  
KANSAS

Migration in Kansas 1970-80



U. S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS

western portion of the state experienced net outmigration, in many instances over 10 percent of their population for the decade, while immigration predominates for counties in the eastern sector.

### Age Structure

The basic population trend in Kansas and in the United States is toward an aging population. The Kansas population is slightly older than that of the U.S., though less now than in previous years. The median age in Kansas rose to 30.1 years in 1980 from a median age of 28.7 years in 1970. In comparison, the U.S. median age was 30 years in 1980, while the 1970 figure was 28.1 years. The Kansas age pattern closely approximates that of the U.S., with the notable exception of the over 65 group where the Kansas proportion is higher.

There is however, significant variation within the state. In 1980, the median age of 84 counties exceeded the state median age (Map 6). Furthermore, while 13 percent of the state population in 1980 were 65 and over, 79 counties have a higher proportion of this age group than the state, and 33 counties have over 20 percent of their population over 65 (Map 7).

Kansas has an older-than-average population because people in this state live longer but also because the state has experienced a significant outmigration of youth in recent decades. Important also is the fact that larger portions of nonworking-age people place disproportionate burdens on the public service capacity without significantly contributing to the tax base.

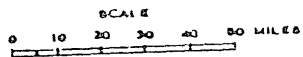
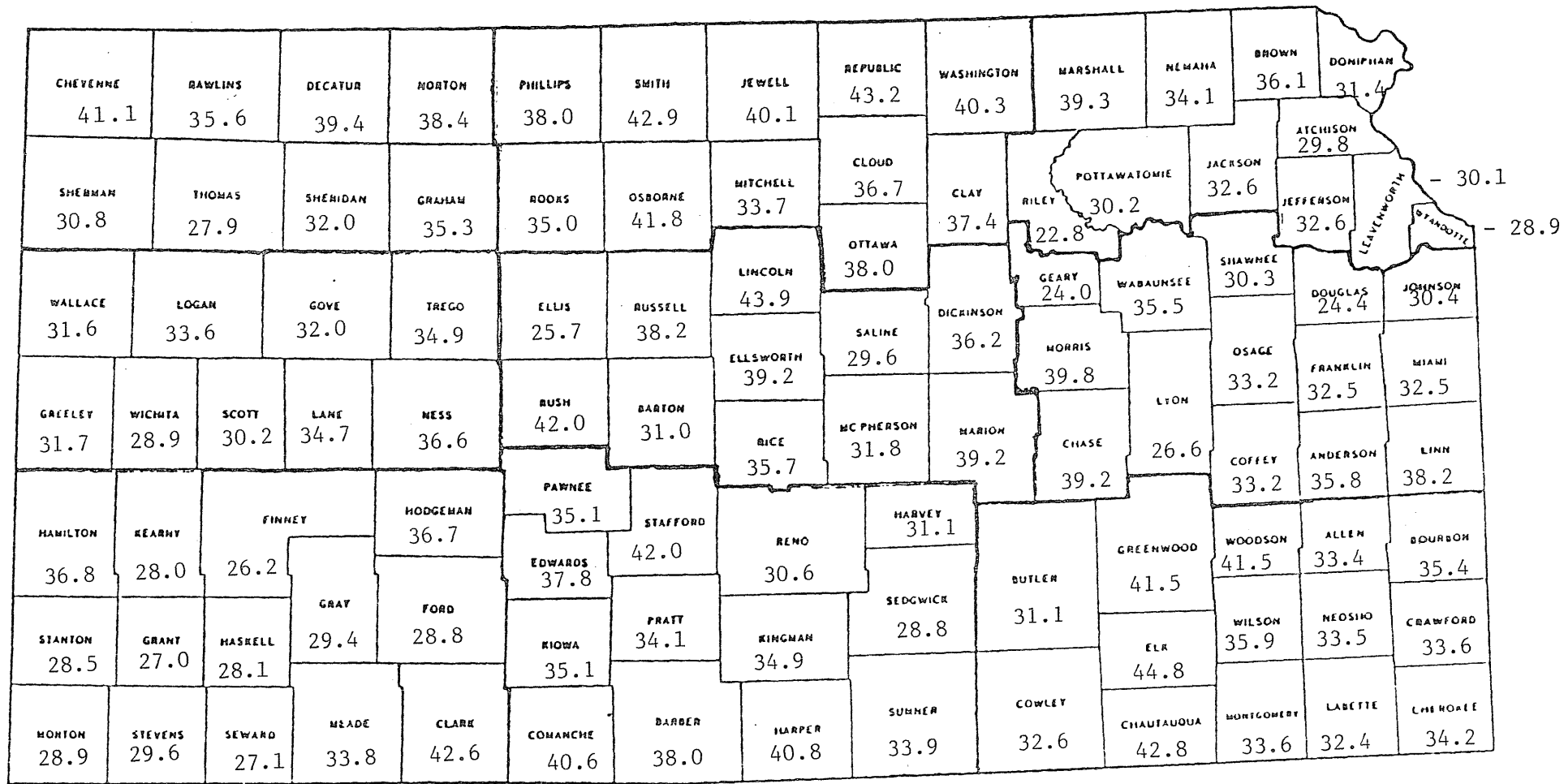
### Employment

Employment in the state grew faster than the national average during the decade of the 1970s, though moderately so for the period 1976 to 1981 with Kansas growth being 13.3 percent and the U.S. average 12.5 percent. This favorable job creation has significantly moderated the net outmigration pattern, but was insufficient to reverse it.

The existing industrial mix of Kansas, while diverse, tends to be of below average technology, and traditional in nature. One implication is that the demand for labor has tended to be less education intensive than the national average. Furthermore, it does not show a high degree of investment in recent years in those industries likely to grow rapidly in the next 10 years. It is a valid generalization to state that industries identified as having potential for

Map 6

MEDIAN AGE OF POPULATION BY COUNTY, 1980

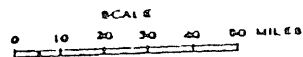
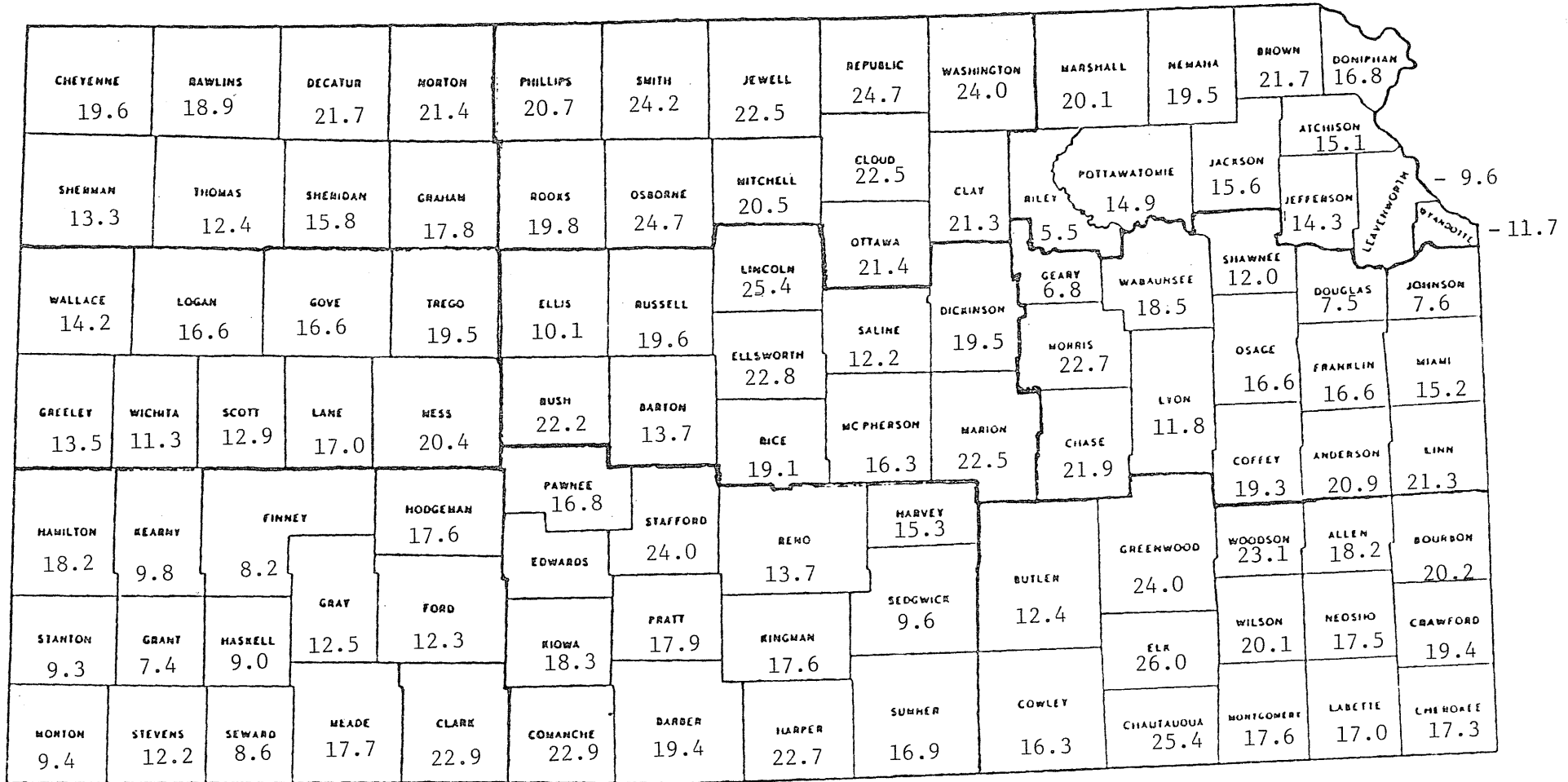


State - 30.1 years

U. S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS

Map 7

PERCENT OF POPULATION 65 YEARS AND OVER, 1980



State - 13.0%

U. S. DEPARTMENT OF COMMERCE  
BUREAU OF THE CENSUS

24

rapid growth are only weakly represented in the current industrial profile for Kansas, and that the prospects for rapid growth of the existing set of state industries are not great (Monograph #12).

Analysis of the Kansas labor force, vis-'a-vis its potential for high technology development in the state, reveals that a smaller proportion of the state work force (3.7 percent) is currently employed in the 33 occupations which embody significant high tech characteristics, relative to the U.S. (4.1 percent).<sup>2</sup> The largest concentration of high tech skills is in the Wichita area, due principally to the aircraft industry (Table 8). Of the 290 firms in high tech manufacturing industries in the state, 85 are located in Kansas City (Kansas) and 64 in Wichita (Table 9). Extrapolating labor force needs to 1990 on the basis of past growth trends in the state relative to the U.S., high tech occupations in the state will grow about 55 percent (23,000 new jobs) by the end of the decade. Those projected to grow the fastest are in the computer field, engineering, and certain technical occupations. Finally, this study notes that while the present program offerings of the Kansas educational system are not concentrated in high tech fields, a continuation of the present pattern will produce a surplus of engineers and scientists and shortages in computer areas and other technical occupations.

A questionnaire survey of Kansas manufacturing firms, either newly established or undertaking a major expansion in the last 5 years, revealed that while the relative importance of various factors in the decision to locate or expand in Kansas varies in different industries, the state's central location and proximity to markets is the most important consideration overall; and that investment by existing and "home-grown" firms is particularly important to the state's manufacturing development. However, as indicated in Figures 6 and 7, labor market factors have generally enhanced this development, in particular the 'right-to-work' law and the availability of labor. The possession of skills by Kansas workers was not so often cited, and wage levels did not feature as a positive factor (Monograph #7).

There are two other important trends affecting employment and unemployment in Kansas, namely the increasing impact of national conditions on the state economy, and the growing influence of the internationalization of the US

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<sup>2</sup> Richard Sexton "The Kansas High Tech Labor Force: Trends and Projections" Kansas Business Review, vol. 7, Fall 1983.

Table 8

## THE HIGH-TECHNOLOGY WORKFORCE IN KANSAS, RILEY COUNTY AND THE KANSAS SMSAs

OCCUPATION	Kansas	Riley County	SMSAs			
			Kansas City*	Lawrence Topeka	Wichita	
Aeronautical and astronautical engineers	2,235	0	153	0	4	2,084
Chemical engineers	344	6	281	70	23	59
Civil engineers	2,435	36	1,848	39	390	370
Electrical engineers	2,074	8	1,904	39	238	705
Industrial engineers	1,985	0	1,259	14	54	944
Mechanical engineers	1,467	8	1,306	25	62	448
Metallurgical engineers	100	0	74	0	0	43
Mining engineers	40	0	11	0	0	0
Petroleum engineers	415	0	59	0	0	86
Agricultural scientists	392	86	111	8	45	18
Biological scientists	350	52	264	35	45	36
Chemists	740	23	719	30	81	111
Geologists	640	12	72	72	19	364
Medical scientists	174	49	102	0	6	55
Physicists	32	0	42	5	0	16
Mathematicians and other math specialists	91	0	0	0	0	78
Statisticians	201	0	200	6	46	36
Drafters	3,701	63	2,558	101	235	906
Electrical and electronic technicians	1,899	44	1,583	56	118	566
Industrial engineering technicians	39	0	36	0	0	18
Mechanical engineering technicians	173	0	100	15	17	65
Medical technicians and laboratory technologists	2,639	70	1,751	68	270	661
Tool programmers	72	0	20	0	0	58
Computer programmers	3,008	126	2,412	147	323	870
Computer systems analysts	1,487	24	1,188	49	207	535
Computer operators	4,215	97	2,072	149	605	926
Peripheral EDP equipment operators	161	0	235	6	45	24
Electricians	6,274	73	3,514	192	577	1,462
Data processing machine mechanics	467	11	417	21	84	127
Office machine repairs	453	18	336	0	47	131
Tool and die makers	1,970	0	770	27	12	1,330
Electrical and electronic assemblers	773	7	924	27	3	282
Numerical control machine tool operators	64	0	12	0	0	31
Total	41,110	813	28,333	1,052	3,556	13,445
% of total labor force	3.7	3.4	4.2	3.1	3.8	6.4

\*includes Missouri portion



Table 9

EMPLOYMENT AND NUMBER OF HIGH TECHNOLOGY ESTABLISHMENTS IN KANSAS,  
THE KANSAS PORTION OF THE KANSAS CITY SMSA, AND THE WICHITA SMSA FOR 1981

SIC	Industry Description	KANSAS		KANSAS CITY SMSA (Kansas Portion)		WICHITA SMSA	
		# of employees	# of establishments	# of employees	# of establishments	# of employees	# of establishments
282	Plastics Materials & Synthetics	100-299	4	20-99	2	---	---
283	Drugs	1865	13	600-1248	8	---	---
284	Soap, Cleaners, & Toilet Goods	1292	19	1600-2499	8	---	---
348	Ordnance & Accessories	500-999	2	---	---	---	---
357	Office Computing & Accounting Machines	1702	12	100-249	7	1000-2499	3
358	Refrigeration and Service Machinery	2382	14	100-249	3	1000-2499	4
361	Electric Distribution Equipment	100-249	4	---	---	---	---
362	Electrical Industrial Apparatus	1584	13	20-99	2	100-249	2
363	Household Appliances	200-499	4	250-499	1	---	---
364	Electric Lighting & Wiring Equipment	907	10	120-348	3	20-99	2
365	Radio & TV Receiving Equipment	73	8	---	---	---	---
366	Communication Equipment	3376	20	2500-4999	9	116	4
367	Electronic Components & Accessories	100-249	36	929-1078	26	20-99	3
369	Misc. Electronic Equipment & Supplies	2228	14	500-998	9	---	---
372	Aircraft & Parts	42,195	49	---	---	40,390	37
376	Guided Missiles & Space Vehicle Parts	---	---	---	---	---	---
379	Misc. Transportation Equipment	628	17	---	---	---	---
381	Engineering & Scientific Instruments	607	6	---	---	586	5
382	Measuring & Controlling Devices	460	8	20-99	2	250-499	3
383	Optical Instruments & Lenses	20-99	2	---	---	---	---
384	Medical Instruments & Supplies	1731	19	500-999	5	---	---
385	Ophthalmic Goods	20-99	3	---	---	---	---
386	Photographic Equip & Supplies	250-499	3	---	---	100-249	1
387	Watches, Clocks & Watchcases	---	---	---	---	---	---
	TOTAL HIGH-TECH MANUFACTURING ESTABLISHMENTS	---	290	---	85	---	64
737	Computer & Data Processing Services	2772	145	691	44	1308	49
739	Miscellaneous Business Services	6767	688	2030	209	2119	184

Source: Kansas County Business Patterns 1981, Bureau of the Census.

Figure 6

TOP-RATED FACTORS FOR LOCATING IN KANSAS  
(New Manufacturing Firms Choosing  
Among 3 Most Significant)

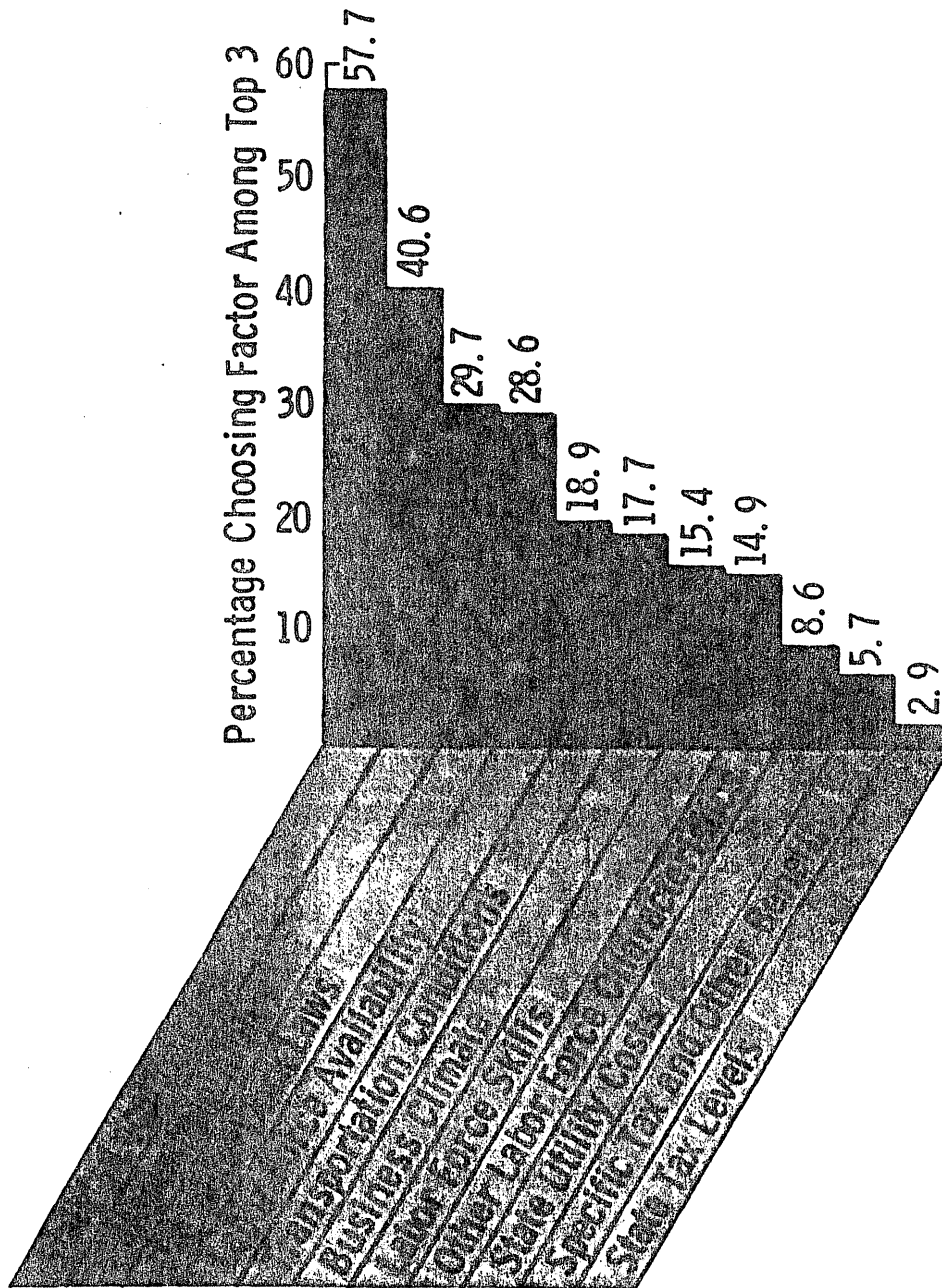
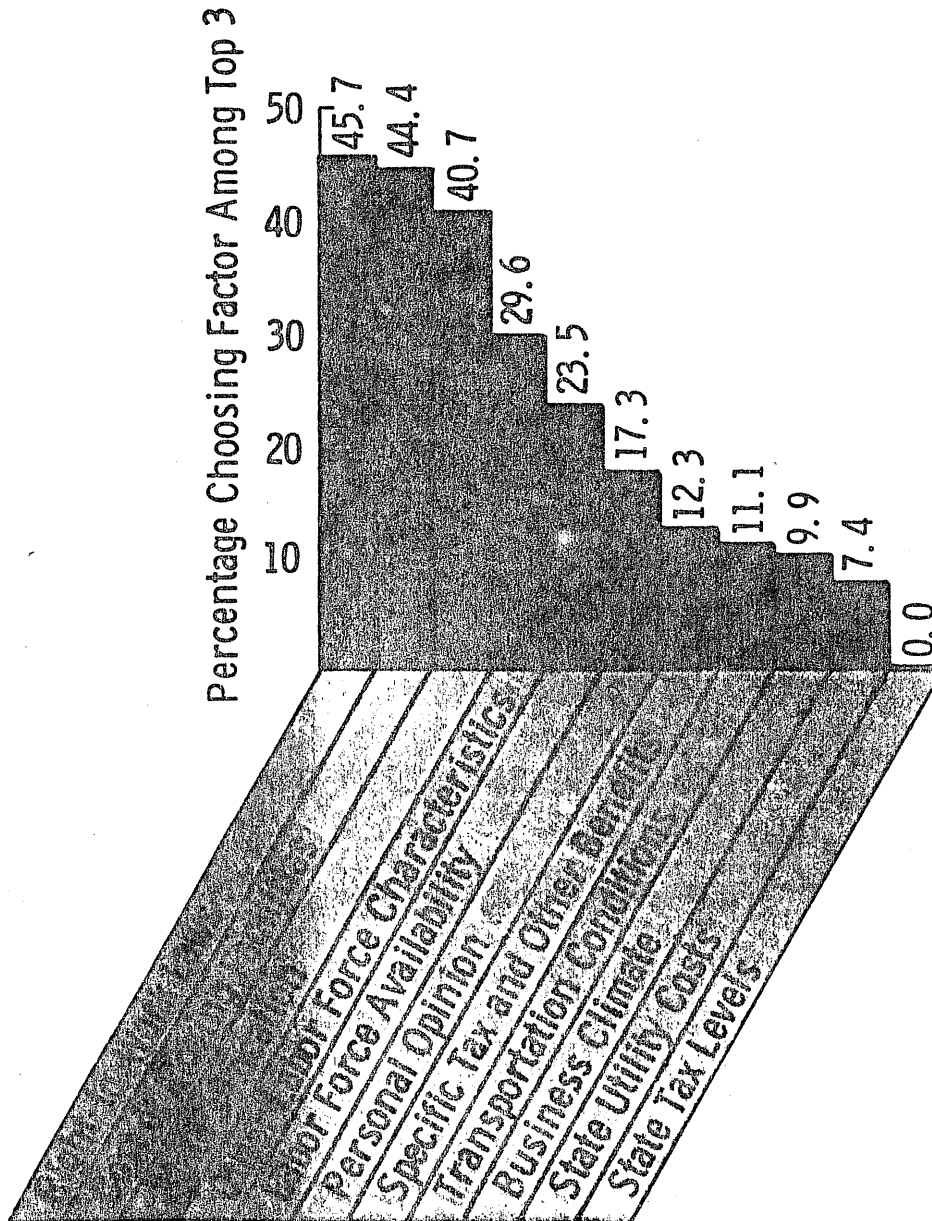


Figure 7

TOP-RATED FACTORS FOR EXPANDING IN KANSAS  
(Expanding Manufacturing Firms Choosing  
Among 3 Most Significant)



economy. With respect to the former, the recent recession has shown that Kansas is not inherently immune to the national business cycle, as many had thought. Rather, analysis reveals the performance of the Kansas economy is primarily dependent upon that of three sectors, agriculture, aircraft, and autos (plus other cyclically sensitive manufacturing). Kansas had fared well in earlier recessions because, fortuitously, either agriculture or aircraft (international component) was in an expanding phase of its cycle while the nation went into a recession, thus ameliorating the impact on the state, whereas all three major sectors were down concurrently in the recent recession.<sup>3</sup>

The impacts of international competition upon the Kansas labor market have been increasing rapidly. By 1980 (the latest figures available), 12.5 per cent of Kansas manufacturing employment was in export industries or in industries related to export industries. This was 33 percent above the 1977 figure and 250 percent above the 1972 figure. (The corresponding US percentage was 13.7, up 34 percent since 1977 and 337 percent since 1972.)

Total employment (manufacturing plus nonmanufacturing) related to manufactured exports was 4.7 per cent of Kansas private sector employment, up 42 per cent since 1977. (The corresponding US percentage was 6.0, up 36 per cent since 1977.)

In addition, there is employment related to agricultural exports (a large proportion of total agricultural production) and employment in industries subject to import competition. Account must also be taken of the multiplier impacts of international industries, which have substantial effects on employment generally.<sup>4</sup>

Overall, the utilization of labor in the state has tended to be below the national average. This is illustrated in Table 10 where labor force participation rates for Kansas males and females have been consistently below national rates (suggesting involuntary hidden unemployment and lack of job opportunities). The gap has been particularly large for women, reflecting fewer job opportunities for Kansas females; however, it closed significantly in the 1970s, suggesting relative improvement in the situation. Two further points can

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<sup>3</sup> Richard Sexton and Bob Glass "Instability in the Kansas Economy," Kansas Business Review, no. 6, Spring 1983.

<sup>4</sup> See K.F. Walker: Assessing the Impact of International Competition on the Kansas Labor Market, paper to Governor's Annual Labor-Management Relations Conference, Kansas, June, 1983.

be made on the labor force status of Kansas women--first, job opportunities vary tremendously by county and region of the state (Map 8), and second, better educated Kansas females were particularly hard hit by the 1980-82 recession (Monograph #9).

Table 10

Recent Labor Force Participation Rates in Kansas and the U.S.

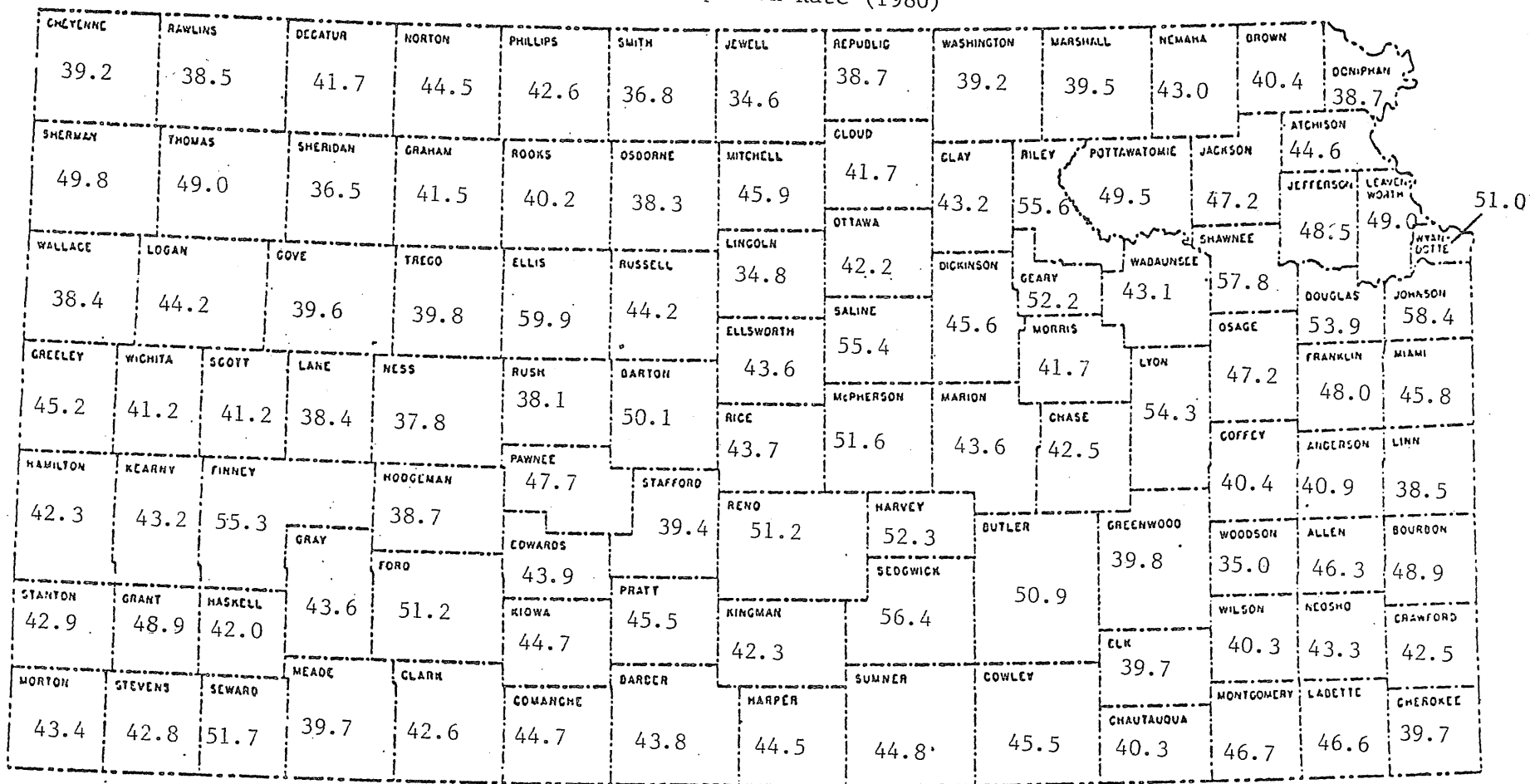
	<u>Kansas</u>			<u>United States</u>		
	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>
1960	57.1	78.7	32.4	59.4	83.3	37.7
1970	58.2	77.5	40.3	60.4	79.7	43.3
1980	62.4	75.0	50.8	63.8	78.0	51.7

County unemployment rates vary substantially (Map 9). The balanced character of employment growth, and the decline of farming employment, have also contributed to the differential vulnerability of the various regions of the state to cyclical fluctuations in economic activity. Part of the differences in county unemployment rates may be attributed to the differential impact of recession upon the various counties, because of the different nature and quantity of economic activity in them. Conversely, when the general level of economic activity is booming, certain regions of the state are more favorably affected than others.

Kansas unemployment rates for demographic groups and over time are lower than the corresponding rates at the national level. This cannot be taken as an indicator of economic vitality, however, in a state context of hidden unemployment and chronic outmigration. Indeed, in normal times, states with high immigration and strong economic growth often have high unemployment rates (California, Florida, Arizona in the late 1970s). Nor can it be taken as a valid measure of economic hardship -- the incidence of disadvantaged population in Kansas was 85 to 90 percent of the US incidence in the period 1978-82, much closer than the unemployment differential between Kansas and the U.S. Fur-

Map 8

Female Labor Force Participation Rate (1980)



State 51.0%

Source: Bureau of Census



thermore, for some demographic groups, the incidence of poverty/disadvantage was greater in Kansas than that of the same group of the national population (Monograph #6).

### III. KEY LABOR MARKET ISSUES FOR KANSAS: GOALS AND STRATEGY FOR STATE HUMAN RESOURCES POLICY

The significant changes underlying economic structure and demographics of Kansas outlined in Section II have had a profound impact on the Kansas labor market. In particular they have given rise to the paradox of concurrent labor shortages and surpluses, and an understanding of these phenomena is necessary to underpin sound policy formulation in relation to employment and human resource development in the state.

There are many dimensions to the labor market problems of Kansas. Eight key issues or problems may be identified, as follows:

1. providing sufficient total employment;
2. achieving an appropriate geographic distribution of employment growth;
3. providing sufficient jobs of a quality appropriate to the education; and skills of the labor force
4. providing sufficient appropriate employment opportunities for women;
5. providing sufficient appropriate employment opportunities for youth;
6. coping with the problems of other special, "target" groups in the labor force;
7. alleviating shortages of skilled labor; and
8. countering the potential for decline in the productive capacity of the labor force.

These will be discussed in turn below, although it needs to be recognized that these issues are closely connected. Their interconnections need to be taken into account in the formulation and administration of policy.

#### Problem No. 1 - Providing Sufficient Total Employment

In order to provide sufficient jobs to employ the total Kansan labor force it is necessary to cope with cyclical and structural factors. Cyclical factors produce relatively short-term fluctuations in total employment in response to



business cycle variations in the level of economic activity generally. Structural factors affect the level of total employment through the growth and decline of the various industries and sectors that make up the state's economy.

Cyclically, the question is to what extent the Kansas economy is becoming more sensitive to the national business cycle. Historically Kansas has been relatively recession-proof, compared with other states.<sup>5</sup> As the previous analysis indicates, however, this historical stability of the Kansas economy in relation to the national business cycle may have been largely fortuitous, the fluctuations in the major volatile sectors of the Kansas economy mostly cancelling each other out in the past. For the rest of the 1980s, the issue then becomes whether this pattern will continue or whether the 1980-82 recession in Kansas, where employment fell near 5 percent, is more indicative of future impacts. The answer to this question depends on the situation of the volatile sectors (farming, aircraft, and automobile/durable goods industries), and it would be unwise to ignore the likelihood of greater cyclical variations in the level of total Kansas employment this decade relative to the past..

From the policy point of view, it is important to continuously monitor developments that might have significant impacts upon the volatile sectors. Such developments may be seasonal and technological; they may consist of events and trends in the national and international economies, and they may be political (even military) in nature, both nationally and internationally. For example, US trade negotiations with China over Chinese textile exports to the US have implications for US grain exports to China, because of China's retaliatory restrictions on these, given the availability of alternative sources of supply from other countries. A further example is whether Boeing will receive approval to fly two-engined jets across the Atlantic, which could have important consequences for employment in Wichita.

Equally important is a knowledge of how development in the volatile sectors will impact the rest of the Kansas economy. Such assessment depends on the capacity to analyze the dynamic structure of the state's economy, so as to pinpoint the industries and regions likely to be affected and to what degree. The ability to do this through economic modelling has not been developed in this state.

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<sup>5</sup> John Cita, "Is Kansas Recession Proof?" Kansas Business Review, Vol. 4, No. 7, 1981

Structurally, the question is whether the principal industries of the Kansas economy will grow sufficiently to absorb the projected expansion of the state's labor force through the 1980s, and if not, whether sufficient new industries can be attracted to Kansas to meet the deficiency in the number of jobs.

The civilian labor force of Kansas is projected to expand by 5.6 percent to approximately 1,186,480 between 1982 and 1987. This estimate assumes zero net migration of workers to and from the state. To the extent that insufficient jobs are available to employ the total labor force, the shortfall will be reflected in unemployment and net outmigration. Net outmigration of workers represents a kind of "exportation" of unemployment.

The decline in agricultural employment has been noted and this structural change is expected to continue into the future. This will be reinforced by the expectation that while agricultural exports greatly expanded in the 1970s, the 1980s are likely to show weak growth for such exports.<sup>6</sup> Altogether, the farm sector, and those industries dependent upon it, are not likely to expand as sources of employment; they are more likely to shrink.

While the farm sector has diminished as a provider of jobs sectors like services, trade and government have played an important role with respect to the provision of jobs for Kansans in recent decades. Such industries are, however, the kind that do not have much growth potential in themselves, being dependent for expansion upon concurrent growth in agriculture, mining or manufacturing, the basic industries. Hence, given that their relative size in the Kansas economy is somewhat akin to the national structure, some increase of employment in the trade and service sectors is likely as part of the continuation of a trend in this direction, but it cannot be expected to be significant.

Thus, the manufacturing sector remains as the main basis for the employment growth necessary to absorb the state's projected labor force. The critical factors here are the growth potential of existing Kansas manufacturing industries and the capacity of the state to attract new industries in this sector.

Preliminary analysis of the prospects for industrial development in Kansas through the 1980s indicates that the existing Kansas industrial profile does not show a high degree of investment in those industries which are projected

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<sup>6</sup> M. Drabenstot: "The 1980's: A Turning Point for US Agricultural Exports?" Federal Reserve Bank of Kansas City; Economic Review, April, 1983.

nationally to grow rapidly. (Manufacture of machinery and plastic products, and health care are the major exceptions.) The Kansas industries most strongly linked to potential growth industries are machinery (non-electrical) manufacture, transportation and wholesaling. These "high opportunity" industries for Kansas are not primarily "high-tech" industries.

There is also the possibility of attracting firms to locate in Kansas and expand the demand for labor. The industries with best prospects for attracting firms to locate in Kansas are machinery (non-electrical) manufacture, plastics products manufacture and transportation. Expansion of existing Kansas firms appears, however, to be likely to contribute more to economic growth in the state than are "immigrant" firms from out-of-state.

A factor that may limit the expansion of the non-electrical machinery manufacturing industry is that it is overwhelmingly composed of very small establishments. In order for Kansas to realize the growth potential of this industry, either additional marketing activity must be co-ordinated for these establishments, or firms using the products of these firms must be induced to locate near clusters of these establishments (as in Wichita).

~~Against this background~~<sup>Given this situation</sup>, the attraction of high-tech industries to the state assumes particular importance. A growth scenario based on past trends projects a growth of 53-57 percent in the present 41,000 high-tech jobs (3.7 percent of the state's work force) by 1990. Such growth would produce about 22,000 - 23,500 new jobs, the fastest growing high-tech occupations being in the computer field, engineering and other technical occupations. Expansion at this rate would not be sufficient to absorb all the state's output of professional workers with skills in the high-tech area, and the "brain drain" from Kansas would presumably continue.

Against the background of the projected slow growth of the Kansas labor force through the decade, however, it is possible that generalized skill shortages for particular technical occupations will become acute as the decade progresses unless appropriate programs are developed within the state's community and vocational institute network. (This point is referred to below in connection with Problem No. 7, Shortages of Skilled Labor.)

If the expansion of high-tech employment is to have more than a ripple effect on the Kansas labor market, Kansas will have to capture more than its proportionate share of the projected growth of high-tech industry.

### Conclusions Regarding Problem No. 1-Providing Sufficient Total Employment

Although the growth of the state's labor force through the 1980's is projected to be slow by historical standards, the endemic problem of generating sufficient jobs to minimize unemployment and outmigration of workers, particularly those with higher occupational qualifications, seems likely to continue. A "chicken and egg" situation may, thus, develop with shortages of skilled labor hampering the growth that is necessary to absorb the expanding labor force. At the same time, Kansas cannot assume that it will be insulated from economic recessions to the extent that has prevailed in the past.

In relation to this issue, the following goals and objectives should be considered:

1. Designate the highest priority for new job creation.
2. Pursue a more than proportional share of high-tech development.
3. Integrate employment and training and economic development policies.
4. Develop a response capability to cyclical recessionary conditions.

Strategy to achieve these goals would include:

- A. Target employment growth for Kansas greater than the national average.
- B. Link JTPA (and other human resources programs) to job creation by committing its availability and accessibility to the fostering of economic development, including in high-tech industries where appropriate.
- C. In the delineation of planning criteria, the determination of performance standards, and the establishment of incentives criteria, tie JTPA funding to
  - (i) the expansion of existing firms, and
  - (ii) the establishment of new firms
- D. Limit JTPA funding to existing firms to occur only for special policy purposes (e.g. opportunities for target groups, like the disabled or dropouts).
- E. Promote the availability and quality of the Kansas labor force to attract industry.
- F. Develop the capability to monitor state, national and international trends and developments salient to the Kansas economy and labor market.

- G. Assess the likely labor requirements of the "growth-potential industries" in terms of qualifications and skills, estimate projected supply of such labor, and adjust vocational education and other job training programs in anticipation of projected imbalances.
- H. Develop a specific plan of job training, search, and relocation, if appropriate, to respond to more serious situations of dislocation arising from structural and cyclical economic changes.

Problem No. 2.- Achieving an Appropriate Geographic Distribution of Employment Growth

In addition to ensuring that a sufficient number of jobs are being generated, it needs to be recognized that an appropriate geographic distribution of employment opportunities is also highly desirable. In Kansas, the task is to develop a multiple strategy whereby areas of positive development are reinforced, while at the same time supporting the type of job creation that is appropriate to areas of employment decline.

Previous analysis has shown the growing concentration of economic activity in the south central and north east corridor of the state, often referred to as the industrial crescent. While other regions have generally experienced stagnation and decline, employment growth has concentrated in this region and, hence, population density. Obviously, this trend has produced substantial differences in the availability of job opportunities across the state and there is every reason to believe that this significantly unbalanced development will continue.

It is not surprising in these circumstances that substantial migration of workers (and their dependents) has occurred. The available evidence suggests that migration into the industrial crescent in response to employment growth concentration in this region has come partly from neighboring states and states further to the east, and partly from areas of declining job opportunities within the state. At the same time, substantial movement occurs within the crescent as opportunities fluctuate within that area. However, perhaps the most significant implications are that first, much outmigration from the declining areas would seem to go directly to other states to the west and southwest, rather than to opportunities within the state; and second, migration out of the state occurs because of the inappropriate types of jobs being created in the state, including in the industrial crescent.

The economics of the different regions of the state dictate a multiple strategy of job development. For example, the focus in relation to rural regions should be agriculture-related and stand-alone type manufacturing. For the industrial crescent, the emphasis should be on integrated manufacturing and on entrepreneurship-type activities. Of course, different types of development will generate different demands for labor, and therefore, different program responses on the part of the education and training system.

In considering the problem of achieving an appropriate geographic distribution of employment, it should be remembered that a relatively high unemployment rate in an area with low population may signify a smaller absolute number of disadvantaged workers than a lower rate in an area of higher population. For programmatic purposes, it is important to look at the absolute numbers of workers affected, as well as the percentages. Even though the number of workers affected may be small, however, there is the issue of equity for the state's citizens, the need to equalize employment opportunities as far as possible.

#### Conclusions Regarding Problem No. 2 - Achieving an Appropriate Geographic Distribution of Employment Growth

The following conclusions emerge from this analysis:

- (a) If the past trend of development continues, as is likely, job opportunities will continue to shrink in certain regions of the state, while increasing in others;
- (b) this encourages high mobility in the work force, involving both substantial intrastate and interstate migration, with the latter likely to be net outward.
- (c) state economic development will need to be based on a multiple strategy that recognizes the different regional circumstances and this will necessitate a differential education and training response.

The following goals and objectives warrant consideration:

1. Support economic development and job creation that is appropriate to the differential circumstances of the respective state regions.
2. Provide opportunities for persons in regions with slower economic growth or decline to participate in job training and vocational education programs that will qualify them for the employment openings, not only in their own region, but also in the regions with more rapid growth.
3. Ensure statewide knowledge and access to employment opportunities.

To achieve these goals, the human resources strategy could include:

- A. Use economic modelling to foreshadow shortfalls in job opportunities, and surpluses in labor supply, in various regions of the state and to anticipate vulnerability to recessionary conditions.
- B. Develop job training programs and formal education offerings that ensure workers in the declining regions are appropriately qualified for employment in the more rapidly growing regions, if opportunities are not available in their own.
- C. Provide relocation and placement assistance that is statewide in orientation.

Problem No. 3 - Providing Jobs of a Quality Appropriate to the Education and Skills of the Labor Force

Equally important as the sufficiency of the total number of jobs and the appropriateness of their geographic distributions is the quality of the jobs available. Job quality may be considered on two dimensions:

- (a) economic (pay, fringe benefits, commuting costs, in relation to hours of work);
- (b) personal (extent to which the worker's skills are utilized, the "fit" of the tasks and working conditions to the personal qualities, preferences and circumstances of the individual, etc.).

In general, workers seek the best quality jobs they can find, and move from low-quality jobs to better quality ones whenever the difference in expected quality is great enough to outweigh the economic and personal costs of the transfer. Thus, employment generation must be considered qualitatively as well as quantitatively.

The Kansas labor force is more educated than that of the nation as a whole, as is shown by Table 11. This is true of the male labor force as well as the female labor force. There is some evidence that the jobs available in Kansas have not been of a quality appropriate for the skills and education of the labor force. For example, between 1965 and 1970 outmigrant workers from Kansas amounted to 15.4 percent of the work force; from 1970 to 1975, 12.7 percent outmigrated. Outmigrant workers during these periods were higher paid prior to their migrating than workers who moved from one industry to another within the state, suggesting that the outmigrants were more skilled (Monograph #2).

Table 11

## Education Levels of Total\* Population, 1978-82

## Males and Females

Years of Schooling	KANSAS									
	1978		1979		1980		1981		1982	
	#	%	#	%	#	%	#	%	#	%
Less than 9	236.1	13	240.9	13	259.7	14	245.0	13	211.7	11
9 - 11	327.8	19	271.3	15	265.3	15	283.4	16	251.6	14
12	658.2	37	694.2	39	719.1	39	727.5	40	758.5	42
13 - 15	303.9	17	342.3	19	334.6	18	314.1	17	323.2	18
16 and over	252.6	14	247.7	14	253.9	14	258.8	14	270.5	15
Total	1778.7	100	1796.4	100	1832.6	100	1828.8	100	1815.4	100
Median	12.02		12.14		12.11		12.07		12.20	

## United States

Years of Schooling	United States									
	1978		1979		1980		1981		1982	
	#	%	#	%	#	%	#	%	#	%
Less than 9	31,426.7	19	30,234.9	18	29,805.9	17	29,538.3	17	28,469.9	16
9 - 11	33,073.0	20	32,400.2	19	32,364.1	19	32,747.0	18	32,177.4	18
12	56,909.9	34	58,555.3	35	59,851.8	35	63,256.3	36	64,797.6	36
13 - 15	24,081.0	14	25,249.1	15	25,709.2	15	26,995.0	15	27,591.6	15
16 and over	20,897.6	13	22,322.7	13	23,360.5	14	24,374.2	14	25,835.2	15
Total	166,388.2	100	168,762.2	100	171,091.6	100	176,910.9	100	178,871.3	100
Median	11.69		11.78		11.81		11.85		11.92	

\* Total population 14 years and over.

Note: Numbers are in thousands.

Source: Calculated from Current Population Survey



Also indicative of the same pattern is the fact that in certain years during the period 1978-82, the incidence of CETA-eligibility among more educated workers in Kansas was higher than it was among such groups nationally, particularly among males, as shown by Table 12. In 1982, the phenomenon was particularly pronounced -- all three male Kansas groups with twelve or more years schooling had a higher incidence of CETA-eligibility than the corresponding United States groups, and two of the female groups with twelve or more years of schooling had a higher incidence than the corresponding United States groups. These data are the more significant in view of the fact that at most education levels, the Kansas incidence was below the national incidence.

Further evidence that workers of higher qualifications and skills do not find appropriate employment in Kansas is provided by Figures 8, 9, and 10. At the national level there was a steady decrease in CETA-eligibility from the least to the most educated group, with each succeeding group with more years of schooling being less prone to CETA-eligibility than the group immediately below it in years-of-schooling. In Kansas, however, the decrease was not always consistent. In some years, particularly among males, a group with more education had a higher incidence of CETA-eligibility than a group with less years of school (Monograph #8).

The profile of industrial development projected for Kansas in Section II above does not suggest that the situation during the 1980s will change markedly from that of the 1970s, unless high-tech developments in Kansas prove to be substantially greater than present trends suggest. It seems unlikely that the quality of jobs generated in Kansas will rise sufficiently to reverse the pattern of shortage of appropriate employment opportunities for the better qualified individuals unless deliberate steps are taken to change the situation (Monographs #12 and #14).

### Conclusions Regarding Problem No. 3 - Providing Sufficient Jobs of A Quality Appropriate to the Education and Skills of the Labor Force

Continued difficulty will be experienced in providing employment opportunities for the more qualified and skilled sections of the Kansas labor force, unless the projected profile of industrial development is radically altered so that it includes a higher proportion of better quality jobs.

In relation to this issue, the goals and objectives of state human resource policy could include the following:

Table 12

Percentage Ratio of Incidence of CETA-Eligibility  
in Kansas and United States\*, 1978-1982

Years of Schooling	<u>Males and Females</u>				
	1978	1979	1980	1981	1982
Less than 9	106	82	66	88	67
9 - 11	86	71	77	93	79
12	79	87	48	87	132
13 - 15	106	69	85	64	87
16 and over	119	112	91	76	155
		<u>Males</u>			
Less than 9	116	96	64	80	65
9 - 11	79	77	65	108	85
12	53	74	65	97	119
13 - 15	128	50	79	62	107
16 and over	180	143	27	62	193
		<u>Females</u>			
Less than 9	98	72	70	96	70
9 - 11	92	67	83	82	75
12	95	94	38	81	139
13 - 15	90	83	92	66	72
16 and over	25	76	161	90	105

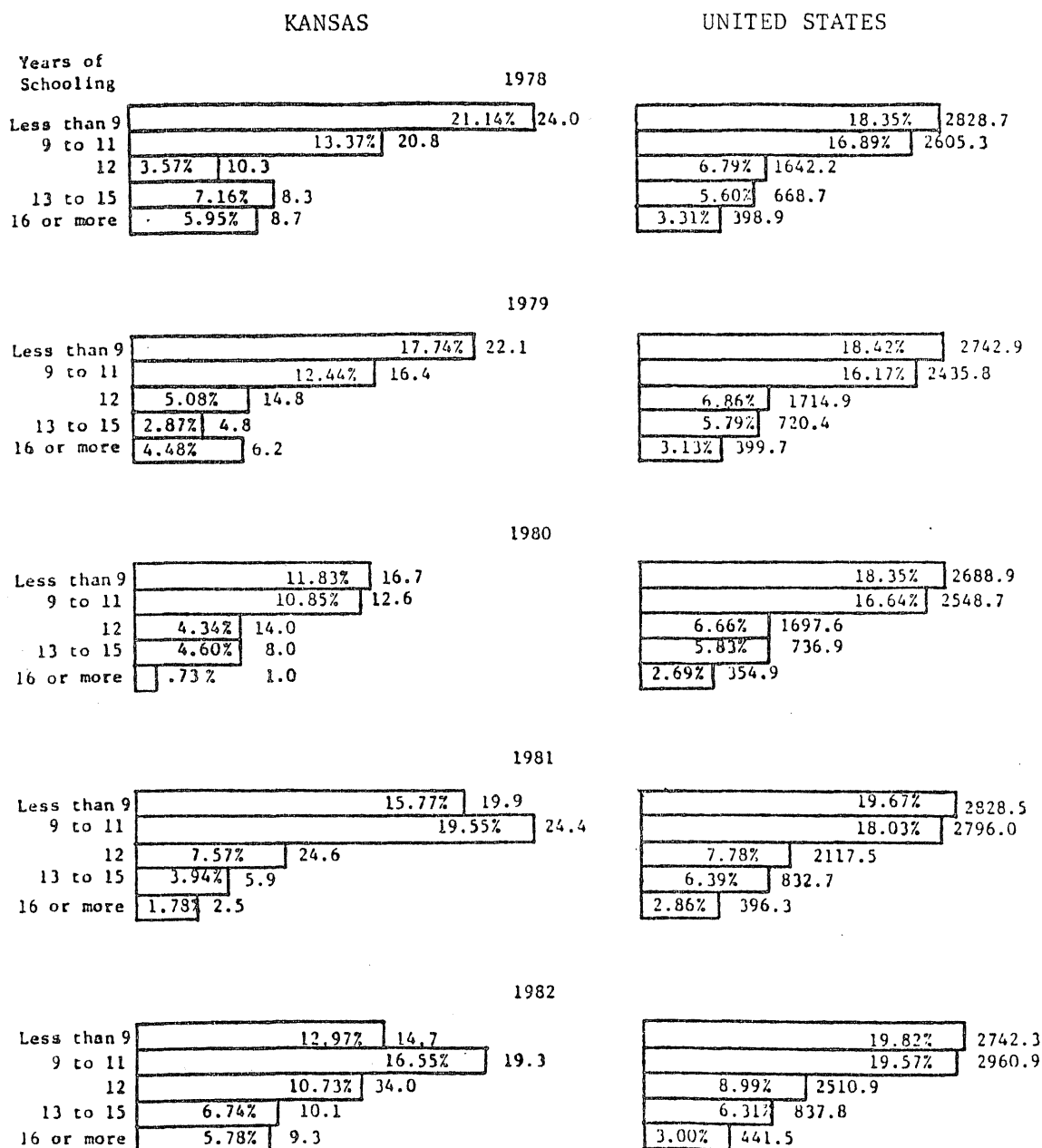
\*Incidence in Kansas as a percentage of incidence in the United States

Source: Calculated from Current Population Survey

Figure 8

Number<sup>1</sup> and Percentage<sup>2</sup> of CETA-Eligible Persons in Education Groups

Males and Females, Kansas and United States, 1978-82



1 - Numbers shown are in thousands.

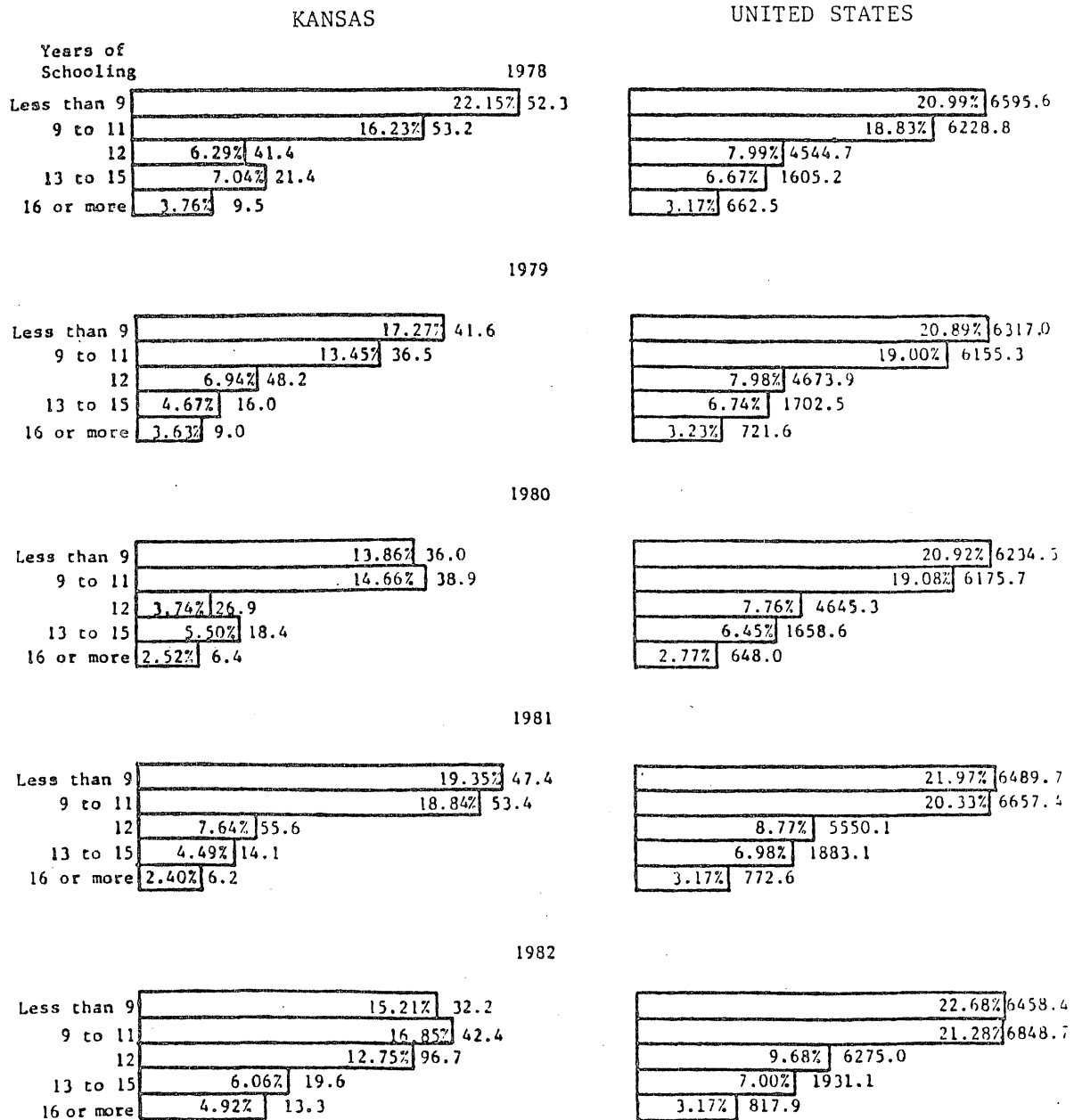
2 - The percentage of the population, both male and female, with a given number of years of schooling who were eligible for CETA. For example, in Kansas in 1978, of the total population with less than 9 years of schooling, 21.14% were eligible for CETA.

Source: Calculated from Current Population Survey.

Figure 9

Number<sup>1</sup> and Percentage<sup>2</sup> of CETA-Eligible Persons in Education Groups

Males, Kansas and United States, 1978-82



1 - Numbers shown are in thousands.

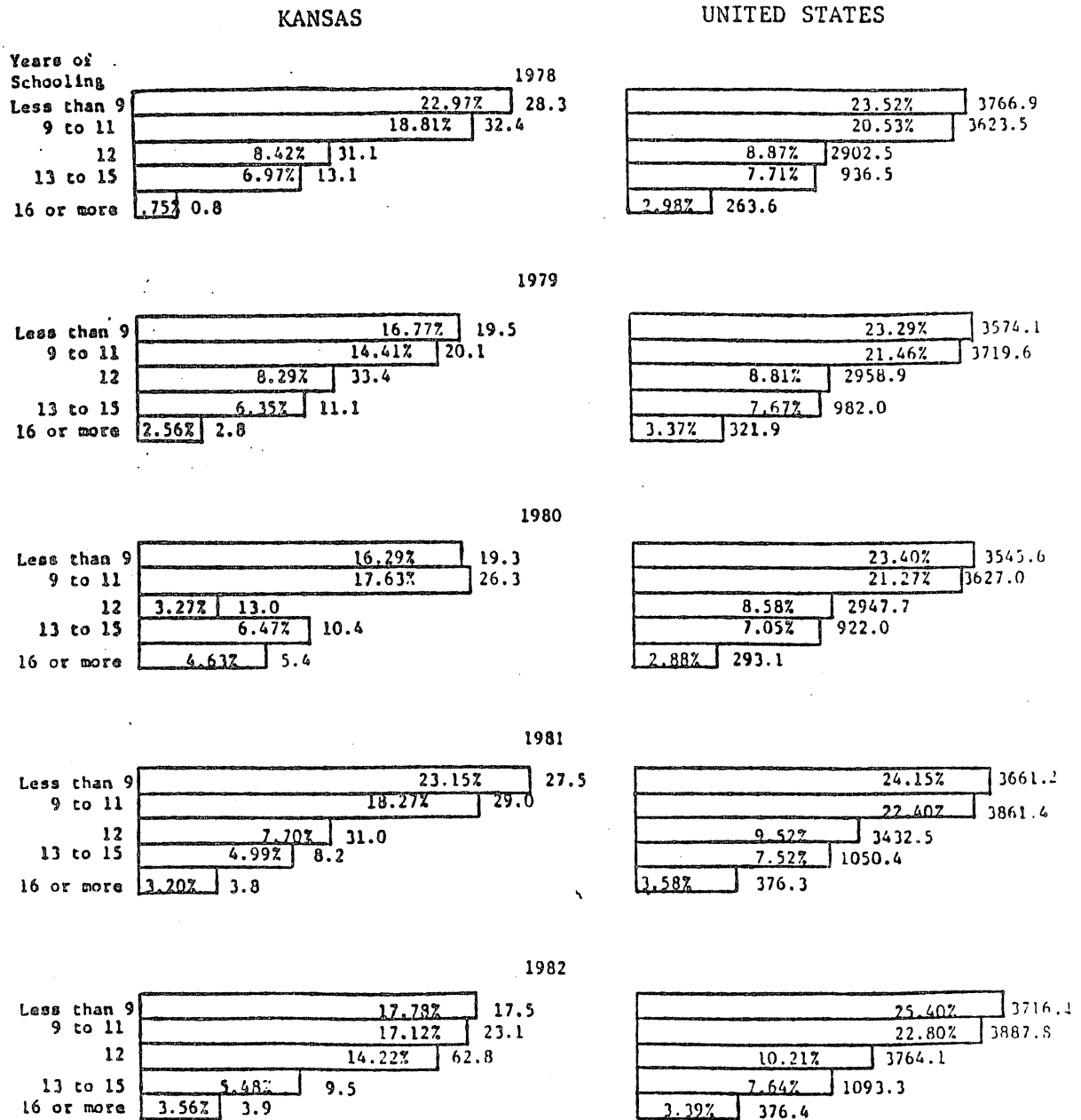
2 - The percentage of the male population with a given number of years of schooling who were eligible for CETA. For example, in Kansas in 1978, of the male population with less than 9 years of schooling, 22.15% were eligible for CETA.

Source: Calculated from Current Population Survey.

Figure 10

Number<sup>1</sup> and Percentage<sup>2</sup> of CETA-Eligible Persons in Education Groups

Females, Kansas and United States, 1978-82



1 - Numbers shown are in thousands.

2 - The percentage of the female population with a given number of years of schooling who were eligible for CETA. For example, in Kansas in 1978, of the female population with less than 9 years of schooling, 22.9% were eligible for CETA.

Source: Calculated from Current Population Survey.

1. Foster the development of industries that will provide better quality (more education and training intensive) jobs in the state.
2. Ensure timely responsiveness on the part of the education and training system to new types of jobs.
3. Foster a greater awareness on the part of the more educated sections of the labor force of better quality job openings as they become available in Kansas.
4. Ensure that the vocational training and experience of the more educated sections of the labor force are appropriate to the demands of the better quality jobs that could become available in Kansas.

To achieve these goals the state's human resource strategy could include:

- A. Reward better quality job placements in JTPA performance and incentive standards.
- B. Support vocational information, counseling and placement services designed to put the more educated sections of the labor force in touch with the better quality job openings that are likely to become available.
- C. Target JTPA funding to better quality job creation.

Problem No. 4 - Providing Sufficient Appropriate Employment Opportunities for Women

Female labor force participation rates for Kansas have been consistently lower than the national average, although converging towards the national rate in recent years. The Kansas rates have also been lower than those of surrounding contiguous states, which have tended to exceed the national average. These differentials suggest that there is some more than usual lack of employment opportunities for women in Kansas.

Furthermore, the distribution of female labor force participation rates throughout the state reveals considerable differences. They have been noticeably lower in counties in the western/northern region and to some extent in the southeast. They have been consistently higher (and normal by national standards) in the south central to northeast industrial/urban corridor. This indicates that the lack of employment opportunities for women is concentrated in the rural sector.

A recent study of the latent work force in Kansas shows that there can be a considerable labor reserve in a typical Kansas county, that this reserve is

composed largely of females, and that these workers would enter the labor force in relatively significant numbers, were jobs to become available.<sup>7</sup>

Further evidence to the same effect is provided by analysis of sex differences in the incidence of unemployment and poverty for the periods 1975-76 and 1978-82. Exceptions were few to the general pattern of higher incidence in most years among females in most age-groups and most ethnic groups. In this respect the situation in Kansas was similar to that in the nation as a whole. (Monograph #9).

This study also showed that the education level of CETA-eligible females was closer to the education level of the general female population than was the education level of CETA-eligible males to the level of the general male population. This indicates that more educated females had more difficulty in obtaining employment than more educated males. The employment prospects for more educated females deteriorated markedly in Kansas between 1981 and 1982, although no such deterioration occurred at the national level. Partly as a result of the greater difficulty experienced by females in obtaining employment, the CETA-eligible populations of both Kansas and the United States are predominantly female (about 57 percent).

#### Conclusions Regarding Problem No.4 - Providing Sufficient Appropriate Employment Opportunities for Women

Women of most age-groups and most ethnic groups consistently experience greater difficulty in obtaining suitable employment than do men. Such difficulties are particularly great in rural areas in Kansas. The incidence of CETA-eligibility among more educated females in Kansas at times approaches and exceeds the incidence in these groups at the national level. The population eligible for JTPA is likely to be predominantly female, with an average education level higher than the national average.

In relation to this issue, the goals and objectives of state human resource policy should be to put more emphasis on equalizing employment opportunities for women, with a particular focus on (1) rural women and (2) better-educated women.

To achieve this goal, the states human resources strategy could include:

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<sup>7</sup> Franke: Kansas Business Review, Vol. 4, May, 1981

- A. Continue efforts to remove all barriers to the employment and promotion of women who possess the appropriate qualifications and experience for available jobs (discriminatory practices, traditional attitudes of both men and women, etc.)
- B. Continued efforts to enable females to obtain the qualifications and experience required for the available jobs (vocational information and counseling services, appropriate vocational training, etc. )
- C. Target females for JTPA training.
- D. Orient vocational training and JTPA funded training of females to "high opportunity" demands of the labor market.
- E. Ensure JTPA training is at a level commensurate with the relatively high education level of the female disadvantaged in Kansas.
- F. Promote the availability of a better educated work force in rural areas to attract industry.

Problem No. 5 - Providing Sufficient Appropriate Employment Opportunities for Youth

It is characteristic of labor markets generally that youth experience greater difficulty in obtaining employment than persons aged between, say, 25 and 50 years. At the national level unemployment rates for the 16-19 years age-group have consistently been between two and three times as high as the rate for the work force as a whole. Table 13 shows that between 1978 and 1982 the same was true of the relation between unemployment in the age-group 16-24 years and unemployment in the total labor force. A similar pattern prevailed in Kansas. (Monograph #10).

Table 13

General and Youth<sup>†</sup> Unemployment Rates (in percent)  
for Kansas and the U.S., 1978-1982

	1978		1979		1980		1981		1982	
	KS	US	KS	US	KS	US	KS	US	KS	US
General Unemployment Rate	3.1	6.0	3.4	5.8	4.7	7.0	4.2	7.5	6.3	9.5
Youth Unemployment Rate	8.7	16.4	7.6	16.1	11.6	17.8	10.4	19.6	na	23.2

<sup>†</sup>workers 16-24 years of age

na = not available

Source: Bureau of Labor Statistics



It is not surprising, as a result, that young workers (age 14-21 years) constituted a substantial proportion of the CETA-eligible population, both in Kansas and the United States between 1978 and 1982 (about one-third in the United States, between one-quarter and one-third in Kansas).(Monograph #10). Given the emphasis on youth in JTPA, young workers may be expected to form a large proportion of the group eligible for JTPA programs.

A further aspect of the problem of providing sufficient appropriate jobs for youth in Kansas is migration out of the state by youth. The age-group 20-30 years experiences the highest net out migration from Kansas. In this group the higher educated and trained workers are more likely to outmigrated. In the 1960-70 the state lost about 40 out of every 100 college graduates produced in the state through net outmigration. This loss of Kansas college youth would be somewhat less, though still significant, if this estimate were adjusted for foreign student graduates, for the high nonresident enrollment of private colleges, and for the twin-state nature of Kansas City. The loss is not restricted to college graduates. (Monograph #1).

A shortfall in appropriate employment opportunities for youth could arise from a combination of factors: inadequate total employment opportunities, inappropriate geographic distribution of employment opportunities, a shortfall in the number of jobs of a quality appropriate to the qualifications of young workers. Young female workers may experience more severe employment problems than young males.

In so far as shortages of appropriate jobs occur in specific regions of the state, it might be expected that young workers would move to other regions where more job openings of an appropriate level are to be found. There is some evidence that such intrastate migration by young workers is substantial. For example, a study of worker migration into and out of three SMSA's (Topeka, Wichita, and Kansas City) showed that each of these experienced net immigration of workers aged 19-24 years. The same study found that over half of the migrants into and out of these SMSA's were aged between 19 and 34 years (Monograph #10).

This study also found that over a two-year period, approximately 10-15 percent of the labor force in the local labor market of an SMSA may "turn over" in the sense that this proportion of workers may move out and be replaced by incoming migrants. Since migrants were found to be predominantly, although not exclusively, lower-paid workers, turnover among disadvantaged workers would be

somewhat higher than this. Given the fact that young workers (14-21 years old) are from one-quarter to one-third of the disadvantaged group, and migration was highest in the younger age-groups, turnover would be still higher among young workers on low incomes or lacking a job.

This point is important for job training and other programs for disadvantaged young workers. Such programs designed for young workers in a specific delivery area at a particular point in time may not be appropriate for all of them if a substantial proportion of them move out of the delivery area and are replaced by others.

Finally it should be noted that research on the characteristics of disadvantaged young workers in Kansas has shown that as a group they differ significantly from young disadvantaged workers in the nation as a whole. (Monograph #10). The most notable differences observed during the period 1978-82 were:

- whereas nationally the percentage of female youth who were disadvantaged was higher than the percentage among male youth, the reverse was the case in Kansas through 1979 to 1981;
- young disadvantaged workers in the United States as a whole were predominantly female throughout the period, but in Kansas in 1980 and 1981 there were slightly more young male disadvantaged workers than female;
- in the United States as a whole, the percentage of young minority disadvantaged workers rose slightly between 1981 and 1982, but in Kansas this percentage dropped substantially during this time;
- whereas in the United States as a whole the percentage of young disadvantaged workers who were employed part-time because they could not find a full-time job was lower throughout the period than the corresponding percentage of total disadvantaged workers, in Kansas the percentage of young disadvantaged workers in this category exceeded the percentage of total disadvantaged workers in 1979 and 1982, suggesting greater underemployment of youth in Kansas;
- in the United States as a whole, young disadvantaged female workers had a higher rate of unemployment than disadvantaged female workers in general throughout the period, but in Kansas young disadvantaged female workers had a lower rate of unemployment than total disadvantaged workers in two of the five years;
- young disadvantaged workers in Kansas had a higher level of education than young disadvantaged workers in the nation as a whole, except in 1979.

Young disadvantaged workers in Kansas also differ from total disadvantaged workers in Kansas in a number of ways.

These findings imply that labor market and job training policies for young disadvantaged workers in Kansas need to be based on the specific characteristics and labor market experience of this group. Policies appropriate for the young disadvantaged worker population of the nation as a whole would not be appropriate for young disadvantaged workers in Kansas because the latter have significantly different characteristics and labor market experience from those of the national young disadvantaged worker population. Nor would policies based on the characteristics of the total disadvantaged worker population in Kansas be appropriate to young disadvantaged workers in Kansas because these have significantly different characteristics and labor market experience from those of the total disadvantaged worker population.

Conclusions Regarding Problem No. 5 - Providing Sufficient Appropriate Employment Opportunities for Youth

Kansas youth experience greater difficulty in finding suitable employment than persons aged between 25 and 50 years. This is reflected in higher unemployment rates among youth, substantial migration out of the state, particularly of youth with higher education and skills, and within the state. Youth will comprise the largest group of persons eligible for job training under JTPA (up to one-third). As a group, young disadvantaged workers in Kansas will have significantly different characteristics from either the national disadvantaged youth group, or the adult group of disadvantaged persons in Kansas.

In relation to this problem, the following goals and objectives merit consideration:

1. Generate above average employment growth, so as to reach youth in the queue.
2. Foster better quality job creation, so as to provide appropriate jobs for qualified Kansas youth.
3. Foster better knowledge of job opportunities in the state among Kansas youth.

To achieve these goals, the state's human resources strategy could include:

- A. Periodically assess (through economic modelling) the likely demand and supply of young workers with varying types and levels of educational qualifications and skills.
- B. Ensure vocational counseling, vocational education and job training programs are adjusted in response to projected shortages and surpluses of jobs for youth.

- C. Set criteria, performance and incentive standards to ensure that the planning of job training and other programs for young disadvantaged workers in Kansas take account of the specific and distinct characteristics and labor market problems of Kansas young disadvantaged workers.
- D. Systematically encourage Kansas employers to hire Kansas youth.
- E. Systematically make Kansas youth aware of Kansas job opportunities, be they in an SDA or outside it, by funding "Kansas Careers" to an effective level.
- F. Ensure JTPA training is at a level commensurate with the relatively high education level of the youth disadvantaged in Kansas.
- G. Orient the vocational education/training of youth to the demands of the labor market.

Problem No. 6.- Coping with the Problems of Other Special, "Target" Groups in the Labor Force

These groups include minorities, handicapped persons, veterans, and older workers. Nationally, all these groups are known to have special employment problems, some of which have been addressed by the legislation.

Research has shown that such groups experience similar problems in Kansas, but has also found that these "target" groups in Kansas also differ significantly in their characteristics and labor market experience from similar groups in the nation as a whole (Monographs #4 and #6).

A particularly important finding of this research was that although unemployment rates and the incidence of economic disadvantage have been lower in Kansas than in the nation as a whole, in certain sections of the population in certain years, the incidence of these indicators of greater employment problems was equal to or in excess of those of corresponding groups at the national level.

These findings pose the policy issue that although such target groups are a small section of the Kansas population, they may experience labor market problems as severe as, or even more severe than, those experienced by the same group at national level, and that their relative disadvantage compared to other sections of the population may be greater in Kansas than in the nation as a whole.

A further significant finding was that although the incidence of CETA-eligibility was always well above the rate of unemployment, both in the United States as a whole and in Kansas, the difference between the two was much greater in Kansas than in the United States. Thus, the unemployment rate is a much less accurate indicator of economic distress in Kansas than in the nation as a whole. It follows that throughout the period the gap between the Kansas and the national unemployment rates was much greater than the gap between the Kansas and the national incidence of CETA-eligibility.

These findings imply that job training programs need to be planned and funded in the light of trends in the size and characteristics of the eligible population in each delivery area, rather than of indicators such as the unemployment rate. They also imply that special efforts may be needed to cope with the problems of particular "target" groups, which may be as severe in Kansas as at the national level, or even more severe. Finally, these results suggest there is an urgent imperative to learn more concerning groups about whom present knowledge is limited or virtually non-existent, such as the handicapped population.

Conclusions Regarding Problem No. 6 - Coping with the Problems of Other Special, "Target" Groups in the Labor Force

"Target" groups in the Kansas labor force (minorities, handicapped, older workers, etc.) are small in number, but experience disadvantages in the labor market, which in certain cases may be as severe as or even more severe than those experienced by the same group at the national level. The relative disadvantage of "target" groups, compared to other sections of the population, may be greater in Kansas than in the nation as a whole.

While "target" groups in Kansas resemble "target" groups at the national level in some ways, they also possess characteristics which differentiate them significantly. Indeed, the incidence of economic disadvantage in Kansas is much closer to the national level than Kansas unemployment rates are to the national rate; unemployment is a much less accurate indicator of economic disadvantage in Kansas than it is in the United States as a whole.

In relation to this issue the goals and objectives of state human resource policy should be:

1. Reduce the employment difficulties of "target" groups, even if this means reduced efficiency in the use of JTPA funds in the name of equity of opportunity.
2. Ensure JTPA funding at the state and SDA levels is responsive to the respective incidences of disadvantage in those populations.

To achieve these goals, the state's human resource strategy could include the following:

- A. Develop estimates of the numbers and nature of workers in the various "target" groups in each SDA.
- B. Assess the costs and benefits of mounting special programs for these groups, or of adapting programs so as to make it possible for members of such groups to participate effectively, where appropriate.
- C. In the light of this assessment, set plan criteria and performance standards to ensure that SDA and the state programs include an appropriate mix of disadvantaged participants (relative to the size, composition, incidence and specific characteristics of the disadvantaged groups and to the cost/benefit relationships involved).
- D. Ensure that JTPA training is appropriate to the education level of the Kansas "target" groups.

#### Problem No. 7. - Alleviating Shortages of Skilled Labor

Until the recent (1980-82) recession, general and specific skill shortages were pervasive throughout the state (particularly in the major urban centers of the south central to north eastern corridor) and can be expected to recur with normal economic conditions in the 1980s. Such shortages have also been an important consideration underlying expansion of Kansas firms outside the state and have been reflected in the low male unemployment rates in urban centers. Finally, skills shortages have sometimes been identified as a primary factor retarding out-of-state investment in Kansas. It was also noted above that development of high-tech industries in Kansas could be hampered by general and specific skill shortages (Monograph #14).

Skill shortages occur when there is a mismatch between the nature of supply and demand. The composition of supply is determined by the education and training system and its responsiveness to the present and expected underlying structure of demand. At the higher levels of education, both national and state demand patterns are relevant in determining characteristics of supply, while at lower levels (community college, technical school, adult training programs, etc.) the composition of state demand should be the determining factor. It is a fundamental question as to whether the education and training system of the state in general, and for our purposes the non-university sector of that system in particular, is interfacing and responding adequately to the state occupational demand pattern. If it is not, skill shortages will exist and continue.

The paradox is that surpluses co-exist with shortages, at least until relieved by outmigration. In this respect, the second element of the mismatch lies in the nature of demand. The industrial sectors which now employ the predominant portion of the labor force (such as services, trade and government) do not create a broad-based demand for highly skilled labor. Furthermore, there is the real question as to whether the type of manufacturing that the state has attracted in recent years is as skill and education intensive as the composition of the work force.

As a result of these factors, the creation of a pool of broadly-based skilled labor through the state's training system, in order to attract industry from out-of-state, is not a realistic option since such labor will migrate out of the state before the new industries come in.

It should be noted that in some regions of the state, shortages of labor of a less-skill-specific nature tend to recur. Sometimes these shortages are periodic in nature where, for example, there are time lags in the response of the work force elsewhere to a surge of economic activity in a specific region (such as southwest Kansas). Sometimes that response is not forthcoming or it is very slow at a time when, for example, a region which previously suffered stagnation and relative decline now experiences growth. This is likely to be a recurring problem and the issue for policy is whether special mechanisms should be developed to cater to these recurrent situations.

#### Conclusions Regarding Problem No. 7 - Alleviating Shortages of Skilled Labor

Mismatches between demands for and supply of labor with general and specific skills may hamper industrial development in Kansas. Such mismatches may occur in particular industries and/or in particular regions of the state. Because surplus skilled labor will outmigrate, as in the past, it is not feasible to remedy this situation by the strategy of developing a pool of broadly based skilled labor in order to attract industry from out of state. It is necessary, therefore, to find ways of adjusting the supply of skills more swiftly in response to specific industrial development opportunities.

Regarding this issue, the following goals and objectives of state human resource policy should be considered:

1. Encourage and facilitate the ability of the education and training system to shorten its response time to changes in the level and nature of demand for skills.

2. Equip JTPA (and other program) participants with skills with long-term potential.
3. Equip JTPA (and other program) participants with the capacities to adapt to changing skill requirements and to learn new skills.

In order to achieve these goals, the state's human resources strategy could include:

- A. Establish effective co-operation between efforts to encourage out-of-state investment in Kansas and new or expanded industrial development in Kansas on the one hand and human resources planning and programs on the other (in effect saying to prospective new or expanding firms, "Kansas has a system of human resource delivery that can respond quickly to your needs for varied skills").
- B. Identify existing and projected skill shortages by occupation and location recurrently, and disseminate this information systematically to education and training establishments.
- C. Foster closer links between educational establishments, JTPA (and other employment and training) programs, and employing organizations, to better link the nature of jobs to training.
- D. Encourage innovative approaches to vocational training which involve multi-skilling and development of trainees' capacities to adapt to technical change and to self-learn new skills (e.g., the "learning place system" of vocational training developed in Sweden which has cut training time dramatically, and produced multi-skilled workers with the capacity to learn additional skills on the job).
- E. Encourage intensified on-the-job training within employing organizations, with incentives for training which emphasizes skills projected to be in demand and the capacity to self-learn new skills.
- F. Ensure that retraining programs for dislocated and older workers are oriented towards skills projected to be in demand and towards self-learning of new skills.
- G. Disincentive JTPA funding for OJT in subsidized employment in low wage, low future occupations, except for emergency situations, and encourage such training to emphasize projected needed skills and the capacity to self-learn new skills.



Problem No. 8. - Countering Potential for Decline in Productive Capacity of the Labor Force

As noted in Section II above, the Kansas population is older than the national population and, like the national population, continues to age. The Kansas labor force is aging along with the population and also to the extent that there is net outmigration of young workers.

The aging of the labor force implies that the majority of workers are more removed from formal training in school and college. It also implies a less mobile labor force, both geographically and occupationally. Older workers are less likely to migrate within the state and a younger labor force adapts more readily to occupational shifts in the demand for labor. One reason for this is that young new entrants to the labor force can move directly into the expanding occupations without having to learn new skills. A further reason is that most young workers learn new skills more readily than most older workers if they must change occupations.

It should be noted, however, there are considerable individual differences among older workers, both in their performance and in their adaptability to new tasks and conditions. Although older workers' psycho-motor abilities tend to be lower than those of younger workers, in general, they have better records of attendance, dependability, and responsibility. Many companies have found it possible to adjust the tasks and working conditions of older workers so that they can continue to perform satisfactorily. Similarly, when retraining programs are designed appropriately for older workers (who tend to have weaker educational levels and capacities, but greater practical knowledge than younger workers) they usually learn new skills as well as younger workers.<sup>8</sup> Thus, some of the potential decline in the productive capacity of the Kansas labor force could be offset to a considerable extent by appropriate measures by Kansas management.

The productive capacity of the Kansas labor force may also decline, however, if shortages of skilled labor persist or perhaps increase in relation to the needs of the growth industries, through the factors mentioned in the

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<sup>8</sup> A huge industrial psychological research literature establishes these statements, also widespread prejudice against older workers. See, for example, B. von Haller Gilmer: Industrial Psychology, McGraw-Hill New York, 2nd Ed. 1966.

preceding section. The possibility exists that the state's labor force could become increasingly less able to meet the needs of the industries expanding nationally and, thereby, increasingly obsolescent.

Given the tendency of younger skilled workers to migrate out-of-state and the overall aging of the Kansas labor force, ways need to be developed to prevent the obsolescence of the mature and older sections of the labor force, who further run the risk of becoming "dislocated" workers, stranded by the tide of technological and structural change. This would increase welfare dependency and the burden on public resources.

Barriers to such developments at present include the rural character of the state, which lessens access to training opportunities, and the fact that the educational and training system has been predominantly youth-oriented. The adult education offerings of school districts that have been developed so far are essentially leisure-oriented.

#### Conclusions Regarding Problem No. 8 - Countering Potential for Decline in Productive Capacity of the Labor Force

The aging of the Kansas labor force entails the possibility that it will become increasingly obsolescent in relation to the needs of the growth industries, especially those industries requiring labor which possesses higher qualifications and new skills. This possibility is increased by the outmigration of more educated and more highly skilled youth.

Such a potential decline in the productive capacity of the labor force could be considerably offset by appropriate measures by management and with the development of retraining programs appropriate to the characteristics of older workers.

Regarding this issue, the goal of state human resources policy should be to:

1. Enhance the opportunities for education and training for the adult population, that are vocationally oriented, linked to potential job demands, and designed appropriately for the special characteristics of older workers.

In order to achieve this goal, state human resources strategy should consider the following:

- A. Foster vocationally-oriented adult education programs adapted to the special characteristics of older workers.

- B. Ensure that the intensified on-the-job training within employing organizations, proposed as part of the strategy to overcome shortages of skilled labor, is appropriately adapted to the special characteristics of mature workers.
- C. Encourage managements to adapt the tasks and working conditions of older workers so as to preserve their productive capacities.
- D. Support the use of modern communications and visual aids techniques to make vocational training available to older workers in rural areas.

#### IV. SUMMARY OF ISSUES AND OBJECTIVES

State human resources policy needs to focus on the following problems areas:

- 1. providing sufficient total employment;
- 2. achieving an appropriate geographic distribution of employment growth;
- 3. providing sufficient jobs of a quality appropriate to the education and skills of the labor force;
- 4. providing sufficient appropriate employment opportunities for women;
- 5. providing sufficient appropriate employment opportunities for youth;
- 6. coping with the problems of other special, "target" groups in the labor force;
- 7. alleviating shortages of skilled labor; and
- 8. countering the potential for decline in the productive capacity of the labor force.

In focusing on these problem areas, the following goals and objectives are recommended:

- 1. Designate the highest priority for new job creation.
- 2. Pursue a more than proportional share of high-tech development.
- 3. Integrate employment and training and economic development policies.
- 4. Develop a response capability to cyclical recessionary conditions.
- 5. Support economic development and job creation that is appropriate to the differential circumstances of the respective state regions.

6. Provide opportunities for persons in regions with slower economic growth or decline to participate in job training and vocational education programs that will qualify them for the employment openings not only in their own region, but also in the regions with more rapid growth in the state.
7. Ensure statewide knowledge and access to employment opportunities.
8. Foster the development of industries that will provide better quality (more education and training intensive) jobs in the state.
9. Encourage and facilitate the ability of the education and training system to shorten its response time to changes in the level and nature of demand for skills.
10. Foster a greater awareness of the part of the more-educated sections of the labor force to better quality job openings as they become available in Kansas.
11. Equalize employment opportunities for women with a particular focus on both rural and better-educated women.
12. Generate above-average employment growth, so as to reach youth in the queue.
13. Foster better quality job creation, so as to provide appropriate jobs for qualified Kansas youth.
14. Foster better knowledge of job opportunities in the state among Kansas youth.
15. Reduce the employment difficulties of "target" groups, even if this means reduced efficiency in the use of JTPA funds in the name of equity of opportunity.
16. Ensure JTPA funding at the state and SDA levels is responsive to the respective incidences of disadvantage in those populations.
17. Equip JTPA and other program participants with skills with long-term potential.
18. Equip JTPA and other program participants with the capacities to respond to changing skill requirements and to learn new skills.
19. Enhance the opportunities for education and training for the adult population, that are vocationally oriented, linked to potential job demands and designed appropriately for the special characteristics of older workers.

APPENDIX A

Institute for Economic and Business Research  
University of Kansas

Labor Market Series Monographs

1. The Kansas Labor Market: Trends, Problems, and Issues (November, 1981)
2. Kansas Labor Market and Migration: A Note from the Continuous Work History Sample (May, 1982)
3. Kansas Labor Market Information System: A Technical Note (August, 1982)
4. Economically Disadvantaged Workers in Kansas: Analysis of Data from the Survey of Income and Education (1975-76), (November, 1982); and
5. CETA Eligibility Estimates for Selected Demographic and Targeted Groups in Kansas and the United States (1978-82), (November, 1982).
6. Demographic Characteristics and Trends of the CETA-Eligible Population of Kansas and United States, 1978-1982, (December, 1982)
7. Factors in Firms' Decisions to Locate or Expand in Kansas: A Sample Survey, (April, 1983)
8. Education Levels of the CETA-Eligible Population of Kansas and the United States, 1978-1982, (April, 1983)
9. Sex Differences in the Incidence of the Economically Disadvantaged and Unemployed Persons in Kansas and the United States, 1975-1982, [Analysis Survey of Income and Education and Current Population Survey], (July, 1983)
10. Young Disadvantaged Workers In Kansas and the United States: 1978-1982 (October, 1983)
11. Migration Patterns of Workers in Three Kansas SMSAs (Topeka, Wichita, Kansas City), 1971-1973 (October 1983)
12. Kansas Economic Development, 1985 and Beyond: A Method and Applications (October 1983)
13. Demographic Characteristics of Youth in Kansas, 1960-1980: A Comparative Analysis Using U.S. Census Data (November 1983)
14. The Kansas High-Tech Labor Force: Trends and Projections (June 1983)