

**Estimating the Impact of Mental Health and Mental
Retardation Hospital Closures in Kansas**

Prepared By

Neal Becker, Ph.D., research economist, author and KU team leader
Pat Oslund, research economist
Norm Clifford, research economist
David Burress, research economist
Institute for Public Policy and Business Research
University of Kansas

and

Carlene Hill, director, author and team liaison
Janet Nickel, associate director, co-author and analyst
Center for Economic Development and Business Research
W. Frank Barton School of Business
Wichita State University

for the

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Estimating The Impact of Mental Health And Mental

Retardation Hospital Closures in Kansas

I. Executive Summary

The Institute for Public Policy and Business Research (IPPBR) at the University of Kansas and the Center for Economic Development and Business Research (CEDBR) at Wichita State University have collaborated on this study at the request of the Hospital Closure Commission (HCC). The following report was prepared jointly and is submitted to the Hospital Closure Commission for their consideration of the economic impact on communities where hospitals are located.

The estimates of economic impact provided by this study are only one of many considerations the HCC is asked to use in making its decision. This is appropriate, for although economic impact estimates can be useful, there are serious limitations. Many estimates and assumptions are required to arrive at the final estimates. Additionally, economic impact cannot measure human suffering due to lost jobs, client service disruption or numerous other non-quantifiable, but important considerations.

Additionally, it is left to the HCC to determine which measure of economic impact is more important. Eleven indicators of economic impact were researched:

Income

1. Direct income
2. Direct share of community income
3. Total income
4. Total share of income

Employment

5. Direct employment
6. Direct share of community employment
7. Total employment
8. Total share of employment

Revenue

9. Sales tax revenue
10. Property tax revenue

and

11. Prospects for re-employment.

All impacts are estimated on the community level, as opposed to the state level. This is consistent with HCC's charge. Other limitations are noted in the report.

Definition of Communities.

IPPBR and CEDBR provided background data and analysis to allow the HCC to make a rational determination of the definition of "community". To assure that combining counties into "communities" did not result in dilution of estimates of the share of the economy impacted, economic impacts were first estimated for each county within the defined community and then for the community as a whole.

The defined communities are as follows.

- ♦ **Kansas Neurological Institute**
 1. Shawnee
- ♦ **Larned State Hospital and Larned Youth Center**
 1. Pawnee
 2. Barton, and
 3. Edwards
- ♦ **Osawatomie State Hospital**
 1. Miami
 2. Anderson, and
 3. Linn
- ♦ **Parsons State Hospital**
 1. Labette
- ♦ **Rainbow Mental Health Facility**
 1. Wyandotte
- ♦ **Topeka State Hospital**
 1. Shawnee
- ♦ **Winfield State Hospital and Training Center**
 1. Cowley, and
 2. Elk.

Two Scenarios Based On A Range Of Commuting Patterns

A range of economic impact estimates are provided, based on two scenarios of commuting patterns. Economic impact estimates depend on some measure of commuter patterns. This is because people tend to spend more of their income in their home county if they also work in that county, as opposed to driving to a different county to work. The 1990 Census provides estimates of commuter patterns for all Kansas counties. These estimates were used in scenario 1. For Wyandotte County the Census Bureau's estimates resulted in such low multipliers that the decision was made to develop a second set of multipliers, assuming no commuting to work. The second set of multipliers provide a range of economic impact estimates (scenario 2). The team of researchers at IPPBR and CEDBR recommend using the first scenario estimates, which are based on the Census Bureau's estimate, with the understanding that in Wyandotte the estimates may be understated in scenario 1.

The following set of tables summarize the results. Tables I and II (scenario 1 and 2) summarize the estimates of economic impact of each of the eleven variables studied. Summaries are provided for the communities and each of the counties within the community. Additionally, Larned Youth Center is shown to allow consideration of the impact of the Youth Center closing along with the Larned State Hospital. Finally, the impact on Shawnee County of closing both the Kansas Neurological Institute and the Topeka State Hospital is provided.

Tables III and IV show the rankings of economic impact, as measured by each of the eleven variables, with a **ranking of 1 indicating the greatest** impact. On these tables we show the communities and the counties where the hospital is located. To rank each of the counties within the community produces meaningless comparisons for the purposes of these summary tables.

In order for the HCC to determine where the greatest economic impact would be, it is necessary to discern the relative importance of the eleven variables studied. The impact may be large in magnitude, but represent a small share of a community's overall economy. Determining the relative importance of these 11 variables is beyond the scope of the research charge of IPPBR and CEDBR.

Nevertheless, Tables V and VI are provided to suggest a rational method the HCC might use. In Tables V and VI, (scenario 1 and 2) we assume that all variables are weighted equally, and sum the rankings to show the greatest relative impact when all variables are taken into consideration. Again a lower number indicates greater impact. Different sets of assumptions on weighting of the variables may result in different final rankings. These scenarios could be explored in detail upon the decision of the HCC as to how variables should be weighted.

Based on these assumptions, Larned State Hospital has a greater impact on its community than the others and Rainbow Mental Health Facility has less. Tables V and VI also reveal that whether the HCC assumes scenario 1 or scenario 2 is the best model, the results, with this weighting, are the same. Should other weightings be used, the results may vary between scenario 1 and 2, and at such time, the HCC may wish to determine which scenario to use. The researchers at IPPBR and CEDBR recommend using scenario 1.

Again, the economic impact results provided herein are only one of the factors to be considered by the HCC and are subject to all limitations noted in the body of the report.

Table I. Summary of Economic Impact of Hospital Closure
Scenario 1*

Agency	Impact on Income Absolute Values		Impact on Income Share of Total		Impact on Employment Absolute Values		Impact on Employment Share of Total		Total Change in Sales tax Revenue	Total Change in Property Taxes	Total Employed Residents**
	Direct	Total	Direct	Total	Direct	Total	Direct	Total			
Kansas Neurological Institute, Agency 363											
Community Total	\$18,529,806	\$27,742,995	0.6%	0.8%	688	1,096	0.8%	0.8%	\$137,925	\$591,179	84,722
Shawnee	\$18,529,806	\$27,742,995	0.6%	0.8%	688	1,096	0.8%	0.8%	\$137,925	\$591,179	84,722
Larned State Hospital, Agency 410											
Community Total	\$24,017,824	\$31,419,997	3.1%	4.0%	773	1,228	3.9%	6.1%	\$99,144	\$667,147	19,988
Pawnee	\$20,540,174	\$26,695,329	12.8%	16.6%	654	1,037	17.7%	28.1%	\$73,792	\$568,825	3,686
Barton	\$2,962,652	\$4,122,079	0.6%	0.8%	101	167	0.7%	1.2%	\$24,177	\$87,860	14,496
Edwards	\$314,998	\$602,589	0.6%	0.7%	18	23	1.0%	1.3%	\$1,175	\$10,462	1,806
Larned Youth Center, Agency 412											
Community Total	\$2,796,166	\$3,416,332	0.4%	0.4%	110	146	0.6%	0.7%	\$12,464	\$68,426	19,988
Pawnee	\$2,054,884	\$2,442,324	1.3%	1.5%	80	103	2.2%	2.8%	\$6,751	\$48,346	3,686
Barton	\$741,282	\$974,008	0.1%	0.2%	30	43	0.2%	0.3%	\$5,713	\$20,080	14,496
Edwards	\$0	\$0	0.0%	0.0%	0	0	0.0%	0.0%	\$0	\$0	1,806
Both Larned Agencies											
Community Total	\$26,813,990	\$34,836,329	3.5%	4.5%	883	1,373	4.4%	6.9%	\$111,608	\$735,572	19,988
Pawnee	\$22,954,058	\$29,137,654	14.1%	18.2%	734	1,140	19.9%	30.9%	\$80,543	\$617,171	3,686
Barton	\$3,703,934	\$5,096,087	0.7%	1.0%	131	210	0.9%	1.5%	\$29,890	\$107,940	14,496
Edwards	\$14,998	\$602,589	0.6%	0.7%	18	23	1.0%	1.3%	\$1,175	\$10,462	1,806
Orawatoma State Hospital, Agency 494											
Community Total	\$13,747,523	\$16,411,339	2.1%	2.5%	455	618	2.4%	3.3%	\$73,717	\$243,965	18,834
Miami	\$11,237,757	\$13,487,726	2.7%	3.3%	375	513	3.1%	4.3%	\$68,292	\$201,960	12,044
Linn	\$1,371,388	\$1,553,060	1.1%	1.3%	48	57	1.6%	1.9%	\$362	\$18,724	3,026
Anderson	\$1,138,378	\$1,370,553	1.0%	1.2%	32	48	0.9%	1.3%	\$4,862	\$23,281	3,764
Parsons State Hospital, Agency 507											
Community Total	\$12,980,048	\$15,551,978	3.6%	4.3%	447	600	4.6%	6.1%	\$90,554	\$285,528	9,765
Labette	\$12,980,048	\$15,551,978	3.6%	4.3%	447	600	4.6%	6.1%	\$90,554	\$285,528	9,765
Rainbow Mental Health Facility, Agency 555											
Community Total	\$1,956,927	\$2,602,749	0.1%	0.1%	87	130	0.1%	0.2%	\$24,542	\$73,699	73,160
Wyandotte	\$1,956,927	\$2,602,749	0.1%	0.1%	87	130	0.1%	0.2%	\$24,542	\$73,699	73,160
Topeka State Hospital, Agency 664											
Community Total	\$14,708,814	\$23,732,081	0.4%	0.7%	456	870	0.5%	1.0%	\$117,985	\$567,320	84,722
Shawnee	\$14,708,814	\$23,732,081	0.4%	0.7%	456	870	0.5%	1.0%	\$117,985	\$567,320	84,722
Both Topeka Agencies											
Community Total	\$33,238,620	\$51,475,077	1.0%	1.5%	1,144	1,966	1.4%	2.3%	\$255,909	\$1,158,499	84,722
Shawnee	\$33,238,620	\$51,475,077	1.0%	1.5%	1,144	1,966	1.4%	2.3%	\$255,909	\$1,158,499	84,722
Winfield State Hospital, Agency 713											
Community Total	\$19,840,915	\$23,783,219	3.0%	3.6%	705	910	3.9%	5.0%	\$84,530	\$417,549	18,218
Cowley	\$19,553,163	\$23,451,193	3.2%	3.8%	691	893	4.1%	5.3%	\$83,537	\$411,688	16,918
Eik	\$287,752	\$332,026	0.6%	0.6%	14	17	1.1%	1.3%	\$993	\$5,861	1,300

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).
** Total employed residents Civilian Labor Force data 1994, KDHR. Used as a measure of prospects for re-employment.

Source: IPPBR, University of Kansas and CEDBR, Wichita State University
Compiled by CEDBR, Wichita State University

Table II. Summary of Economic Impact of Hospital Closure
Scenario 2*

Agency	Impact on Income Absolute Values		Impact on Income Share of Total		Impact on Employment Absolute Values		Impact on Employment Share of Total		Total Change in Sales Tax Revenue	Total Change in Property Taxes	Total Employed Residents**
	Direct	Total	Direct	Total	Direct	Total	Direct	Total			
Kansas Neurological Institute, Agency 363											
Community Total	\$18,529,806	\$29,968,197	0.6%	0.9%	688	1,194	0.8%	1.4%	\$148,988	\$678,073	84,722
Shawnee	\$18,529,806	\$29,968,197	0.6%	0.9%	688	1,194	0.8%	1.4%	\$148,988	\$678,073	84,722
Larned State Hospital, Agency 410											
Community Total	\$24,017,824	\$32,248,977	3.1%	4.2%	773	1,263	3.9%	6.3%	\$101,762	\$667,147	19,988
Pawnee	\$20,540,174	\$27,410,719	12.8%	17.1%	654	1,066	17.7%	28.9%	\$75,769	\$668,825	3,686
Barton	\$2,962,652	\$4,229,046	0.6%	0.8%	101	173	0.7%	1.2%	\$24,805	\$87,860	14,496
Edwards	\$514,998	\$609,211	0.6%	0.7%	18	23	1.0%	1.3%	\$1,188	\$10,462	1,806
Larned Youth Center, Agency 412											
Community Total	\$2,796,166	\$3,476,419	0.4%	0.4%	110	150	0.6%	0.7%	\$12,694	\$69,642	19,988
Pawnee	\$2,054,884	\$2,481,830	1.3%	1.5%	80	105	2.2%	2.9%	\$6,860	\$49,128	3,686
Barton	\$741,282	\$994,590	0.1%	0.2%	30	44	0.2%	0.3%	\$5,834	\$20,514	14,496
Edwards	\$0	\$0	0.0%	0.0%	0	0	0.0%	0.0%	\$0	\$0	1,806
Both Larned Agencies											
Community Total	\$26,813,990	\$35,725,396	3.5%	4.6%	883	1,412	4.4%	7.1%	\$114,456	\$736,788	19,988
Pawnee	\$22,595,058	\$29,892,549	14.1%	18.6%	734	1,172	19.9%	31.8%	\$82,629	\$617,953	3,686
Barton	\$3,703,934	\$5,223,636	0.7%	1.0%	131	218	0.9%	1.5%	\$30,638	\$108,374	14,496
Edwards	\$514,998	\$609,211	0.6%	0.7%	18	23	1.0%	1.3%	\$1,188	\$10,462	1,806
Oswatoole State Hospital, Agency 494											
Community Total	\$13,747,523	\$16,956,409	2.1%	2.6%	455	650	2.4%	3.4%	\$76,277	\$251,815	18,834
Miami	\$11,237,757	\$13,976,887	2.7%	3.4%	375	541	3.1%	4.5%	\$70,769	\$209,035	12,044
Linn	\$1,371,388	\$1,589,126	1.1%	1.3%	48	59	1.6%	1.9%	\$575	\$19,160	3,026
Anderson	\$1,138,378	\$1,390,395	1.0%	1.2%	32	50	0.9%	1.3%	\$4,933	\$23,620	3,764
Parsons State Hospital, Agency 507											
Community Total	\$12,980,048	\$16,018,547	3.6%	4.4%	447	629	4.6%	6.4%	\$93,271	\$293,934	9,765
Labette	\$12,980,048	\$16,018,547	3.6%	4.4%	447	629	4.6%	6.4%	\$93,271	\$293,934	9,765
Rainbow Mental Health Facility, Agency 555											
Community Total	\$1,956,927	\$3,421,775	0.1%	0.1%	87	158	0.1%	0.2%	\$32,264	\$93,711	73,160
Wyandotte	\$1,956,927	\$3,421,775	0.1%	0.1%	87	158	0.1%	0.2%	\$32,264	\$93,711	73,160
Topelka State Hospital, Agency 664											
Community Total	\$14,708,814	\$25,959,345	0.4%	0.8%	456	956	0.5%	1.1%	\$129,057	\$616,980	84,722
Shawnee	\$14,708,814	\$25,959,345	0.4%	0.8%	456	956	0.5%	1.1%	\$129,057	\$616,980	84,722
Both Topelka Agencies											
Community Total	\$33,238,620	\$55,927,542	1.0%	1.7%	1,144	2,151	1.4%	2.5%	\$278,045	\$1,295,053	84,722
Shawnee	\$33,238,620	\$55,927,542	1.0%	1.7%	1,144	2,151	1.4%	2.5%	\$278,045	\$1,295,053	84,722
Winfield State Hospital, Agency 713											
Community Total	\$19,840,915	\$24,119,917	3.0%	3.6%	705	929	3.9%	5.1%	\$85,727	\$423,386	18,218
Cowley	\$19,553,163	\$23,783,519	3.2%	3.9%	691	912	4.1%	5.4%	\$84,721	\$417,448	16,918
Elk	\$287,752	\$336,398	0.6%	0.7%	14	17	1.1%	1.3%	\$1,006	\$5,938	1,300

* Assumes everyone lives and works in the same county except hospital employees.
** Total employed residents Civilian Labor Force data 1994, KDHHR. Used as a measure of prospects for re-employment.

Source: IPPBR, University of Kansas and CEDBR, Wichita State University
Compiled by CEDBR, Wichita State University

Table III. Ranking of Economic Impact of Hospital Closure by Indicator
 Scenario 1*
 (Number 1 indicates the largest impact)

Agency	Impact on Income Absolute Values		Impact on Income Share of Total		Impact on Employment Absolute Values		Impact on Employment Share of Total		Total Change in Sales tax Revenue	Total Change in Property Taxes	Total Employed Residents**
	Direct	Total	Direct	Total	Direct	Total	Direct	Total			
Community Totals											
Both Larned Agencies	2	2	2	1	2	2	2	1	4	2	4
Both Topoka Agencies	1	1	6	6	1	1	6	6	1	1	7
Kansas Neurological Institute, Agency 363	5	4	7	7	5	4	7	7	2	4	7
Larned State Hospital, Agency 410	3	3	3	3	3	3	4	4	5	3	4
Csawatomie State Hospital, Agency 494	7	7	5	5	7	7	5	5	8	8	3
Parsons State Hospital, Agency 507	8	8	1	2	8	8	1	7	6	7	1
Rainbow Mental Health Facility, Agency 555	9	9	9	9	9	9	9	9	9	9	6
Topoka State Hospital, Agency 664	6	6	8	8	6	6	8	8	3	5	7
Winfield State Hospital, Agency 713	4	5	4	4	4	5	3	4	7	6	2
County Where Hospital is Located											
Cowley (WSH)	4	6	4	4	3	5	4	4	5	6	5
Labette (FSH)	7	7	3	3	7	7	3	3	4	7	3
Miami (OSH)	8	8	5	5	8	8	5	5	8	8	4
Pawnee (Both Larned Agencies)	2	2	1	1	2	2	1	1	6	2	1
Pawnee (TSH)	3	4	2	2	5	4	2	2	7	4	1
Shawnee (Both Topoka Agencies)	1	1	6	6	1	1	6	6	1	1	7
Shawnee (KND)	5	3	7	7	4	3	7	7	2	3	7
Shawnee (TSH)	6	5	8	8	6	6	8	8	3	5	7
Wyandotte (RMHP)	9	9	9	9	9	9	9	9	9	9	6

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).
 ** Total employed residents Civilian Labor Force data 1994, KDHR. Used as a measure of prospects for re-employment.

Source: IPPBR, University of Kansas and CEDBR, Wichita State University
 Compiled by CEDBR, Wichita State University

Table IV. Ranking of Economic Impact of Hospital Closure by Indicator
 Scenario 2*
 (Number 1 indicates the largest impact)

Agency	Impact on Income Absolute Values		Impact on Income Share of Total		Impact on Employment Absolute Values		Impact on Employment Share of Total		Total Change in Sales tax Revenue	Total Change in Property Taxes	Total Employed Residents**
	Direct	Total	Direct	Total	Direct	Total	Direct	Total			
Community Totals											
Both Larned Agencies	2	2	2	6	2	2	2	6	4	2	4
Both Topeka Agencies	1	1	6	6	1	1	2	6	1	1	7
Kansas Neurological Institute, Agency 363	5	4	7	7	5	4	7	7	2	3	7
Larned State Hospital, Agency 410	3	3	3	3	3	3	4	4	5	4	4
Oswatimite State Hospital, Agency 494	7	7	5	5	7	7	5	5	8	8	3
Parsons State Hospital, Agency 507	8	8	1	2	8	8	1	2	6	7	1
Rainbow Memorial Health Facility, Agency 555	9	9	9	9	9	9	9	9	9	9	6
Topeka State Hospital, Agency 664	6	5	8	8	6	5	8	8	3	5	7
Winfield State Hospital, Agency 713	4	6	4	4	4	6	3	4	7	6	2
County Where Hospital is Located											
Cowley (WSH)	4	6	4	4	3	6	4	4	5	6	5
Labette (PSH)	7	7	7	7	7	7	3	3	4	7	3
Miami (OSH)	8	8	5	5	8	8	5	5	8	8	4
Pawnee (Both Larned Agencies)	2	3	1	1	2	3	1	1	6	3	1
Pawnee (LSH)	3	4	2	2	5	4	2	2	7	5	1
Shawnee (Both Topeka Agencies)	1	1	2	6	4	1	6	6	1	1	7
Shawnee (KNH)	5	2	7	7	4	2	7	7	2	2	7
Shawnee (TSH)	6	5	8	8	6	5	8	8	3	4	7
Wyandotte (RMHF)	9	9	9	9	9	9	9	9	9	9	6

* Assumes everyone lives and works in the same county except hospital employees.

** Total employed residents Civilian Labor Force data 1994, KDFHR. Used as a measure of prospects for re-employment.

Source: IPPBR, University of Kansas and CEDBR, Wichita State University

Compiled by CEDBR, Wichita State University

Table V. Overall Economic Impact of Hospital Closure
Assuming All Indicators Have Equal Weight
Scenario 1*
(Number 1 indicates the largest impact)

Community Totals	Ranking	County Where Hospital is Located	Ranking
Both Larned Agencies	1	Pawnee (Both Larned Agencies)	1
Both Topeka Agencies	2 tie	Pawnee (LSH)	2
Larned State Hospital, Agency 410	2 tie	Shawnee (Both Topeka Agencies)	3
Winfield State Hospital, Agency 713	4	Cowley (WSH)	4
Parsons State Hospital, Agency 507	5	Labette (PSH)	5
Kansas Neurological Institute, Agency 363	6	Shawnee (KNI)	6
Osawatomie State Hospital, Agency 494	7	Shawnee (TSH)	7
Topeka State Hospital, Agency 664	8	Miami (OSH)	8
Rainbow Mental Health Facility, Agency 555	9	Wyandotte (RMHF)	9

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).

Source: IPPBR, University of Kansas and CEDBR, Wichita State University
 Compiled by CEDBR, Wichita State University

Table VI. Overall Economic Impact of Hospital Closure
Assuming All Indicators Have Equal Weight
Scenario 2*
(Number 1 indicates the largest impact)

Community Totals	Ranking	County Where Hospital is Located	Ranking
Both Larned Agencies	1	Pawnee (Both Larned Agencies)	1
Both Topeka Agencies	2	Pawnee (LSH)	2 tie
Larned State Hospital, Agency 410	3	Shawnee (Both Topeka Agencies)	2 tie
Winfield State Hospital, Agency 713	4	Cowley (WSH)	4
Parsons State Hospital, Agency 507	5	Shawnee (KNI)	5
Kansas Neurological Institute, Agency 363	6	Labette (PSH)	6
Osawatomie State Hospital, Agency 494	7	Shawnee (TSH)	7
Topeka State Hospital, Agency 664	8	Miami (OSH)	8
Rainbow Mental Health Facility, Agency 555	9	Wyandotte (RMHF)	9

* Assumes everyone lives and works in the same county except hospital employees.

Source: IPPBR, University of Kansas and CEDBR, Wichita State University
 Compiled by CEDBR, Wichita State University

II. Definition of "Community"¹

The Hospital Closure Commission (HCC) was charged by the legislature to consider, among other factors, "the economic impact of closure of a hospital on the community where the hospital is located". It was thereby left to the HCC to define "community". The first step of our analysis was to provide objective data and make recommendations regarding the best definition of "community".

This was an important first step because the definition of "community" being studied has a significant effect on the results of further analysis. If the community boundary is drawn too narrow, estimates of the amount of total impact, which depend on estimates of total secondary spending, will be too low. On the other hand, if the boundary is drawn too wide, the total impact as a share of the total economy in the community is diluted.

Recognizing that the subtle and distinct dynamics of each community cannot be fully modeled, we identified a set of criteria which would allow consistent and rational rules for determining the definition of community for each of the hospitals. Additionally, we limited our analysis to geographies for which consistent, relevant, reliable and objective data is available, which in most cases, is the county boundary. The data required for economic impact studies is usually not available at a city level, particularly in more rural areas. Therefore we recommended to the HCC that the county within which the hospital resides be considered the most narrow definition of "community". We also recognized that this definition might be too narrow and cause underestimation of total impact for some hospitals.

The criteria used by the HCC to define the broader communities are as follows.

The community will be defined as the county where the hospital is located and any other counties where:

1. 50 or more hospital employees reside or
2. hospital employees represent 1% or more of the total number of employed residents of a county.

¹ This section written by Carlene Hill, CEDBR, WSU. All supporting data compilation and analysis provided by Janet Nickel, CEDBR, WSU.

To determine which counties met the first criterion, CEDBR analyzed data provided by SRS showing number of employees of each hospital by city of residence. To determine which counties met the second criterion we compared the number of hospital employees living in surrounding counties, to the total number of employed people living in those counties. The total number of employed persons living in the county was based on data from the 1990 U.S. Census Bureau. (The timing of the decision did not allow use of more current Civilian Labor Force data for each county.) Tables 1 and 2 on the following pages show the results. Based on the analysis of Table 2 against the established criteria, the following communities were defined for each of the hospitals. (Bold indicates county where hospital exists.)

- ◆ **Kansas Neurological Institute**
 1. **Shawnee**
- ◆ **Larned State Hospital and Larned Youth Center**
 1. **Pawnee**
 2. Barton, and
 3. Edwards
- ◆ **Osawatomie State Hospital**
 1. **Miami**
 2. Anderson, and
 3. Linn
- ◆ **Parsons State Hospital**
 1. **Labette**
- ◆ **Rainbow Mental Health Facility**
 1. **Wyandotte**
- ◆ **Topeka State Hospital**
 1. **Shawnee**
- ◆ **Winfield State Hospital and Training Center**
 1. **Cowley, and**
 2. **Elk.**

Appendix A provides more details.

Recognizing that an analysis of these communities in aggregate would, in some instances dilute the share of the hospital's contribution to a community, we analyzed first the county where the hospital exists, and then the broader "community" as defined above.

**TABLE 1. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(JULY 1995 EMPLOYMENT LEVELS)**

KANSAS NEUROLOGICAL INSTITUTE, TOPEKA, AGENCY 363

COUNTY*	EMPLOYEES	% OF TOTAL
SHAWNEE	699	90.5%
OSAGE	23	3.0%
WABAUNSEE	13	1.7%
DOUGLAS	10	1.3%
JEFFERSON	10	1.3%
JACKSON	7	0.9%
JOHNSON	2	0.3%
POTTAWATOMIE	2	0.3%
NEMAHA	1	0.1%
MITCHELL	1	0.1%
ELLIS	1	0.1%
WYANDOTTE	1	0.1%
FRANKLIN	1	0.1%
LYON	1	0.1%
TOTAL EMPLOYEES	772	100.0%

LARNED STATE HOSPITAL, LARNED, AGENCY 410

COUNTY*	EMPLOYEES	% OF TOTAL
PAWNEE	668	80.4%
BARTON	100	12.0%
STAFFORD	18	2.2%
EDWARDS	17	2.0%
RUSH	11	1.3%
RICE	4	0.5%
ELLIS	2	0.2%
KIOWA	2	0.2%
PHILLIPS	2	0.2%
NESS	2	0.2%
RUSSELL	2	0.2%
MCPHERSON	1	0.1%
HODGEMAN	1	0.1%
FORD	1	0.1%
TOTAL EMPLOYEES	831	100.0%

**TABLE 1. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(JULY 1995 EMPLOYMENT LEVELS)**

OSAWATOMIE STATE HOSPITAL, OSAWATOMIE, AGENCY 494

COUNTY*	EMPLOYEES	% OF TOTAL
MIAMI	384	68.3%
LINN	48	8.5%
FRANKLIN	40	7.1%
ANDERSON	33	5.9%
JOHNSON	29	5.2%
WYANDOTTE	4	0.7%
DOUGLAS	4	0.7%
BOURBON	3	0.5%
CLARK	3	0.5%
LEAVENWORTH	3	0.5%
CRAWFORD	2	0.4%
ALLEN	2	0.4%
LABETTE	1	0.2%
BARBER	1	0.2%
SHAWNEE	1	0.2%
WOODSON	1	0.2%
OUT OF STATE	3	0.5%
TOTAL EMPLOYEES	562	100.0%

PARSONS STATE HOSPITAL & TRAINING CENTER, PARSONS, AGENCY 507

COUNTY*	EMPLOYEES	% OF TOTAL
LABETTE	450	84.1%
NEOSHO	40	7.5%
CRAWFORD	24	4.5%
MONTGOMERY	14	2.6%
CHEROKEE	5	0.9%
ALLEN	1	0.2%
OUT OF STATE	1	0.2%
TOTAL EMPLOYEES	535	100.0%

**TABLE 1. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(JULY 1995 EMPLOYMENT LEVELS)**

RAINBOW MENTAL HEALTH FACILITY, KANSAS CITY, AGENCY 555

COUNTY*	EMPLOYEES	% OF TOTAL
WYANDOTTE	54	38.6%
JOHNSON	41	29.3%
MIAMI	3	2.1%
DOUGLAS	1	0.7%
LEAVENWORTH	1	0.7%
SHAWNEE	1	0.7%
OUT OF STATE	39	27.9%
TOTAL EMPLOYEES	140	100.0%

TOPEKA STATE HOSPITAL, TOPEKA, AGENCY 664

COUNTY*	EMPLOYEES	% OF TOTAL
SHAWNEE	469	82.9%
DOUGLAS	26	4.6%
OSAGE	18	3.2%
WABAUNSEE	14	2.5%
JACKSON	12	2.1%
JEFFERSON	12	2.1%
POTTAWATOMIE	7	1.2%
LYON	2	0.4%
NEMAHA	1	0.2%
COFFEY	1	0.2%
RILEY	1	0.2%
GEARY	1	0.2%
ATCHISON	1	0.2%
OUT OF STATE	1	0.2%
TOTAL EMPLOYEES	566	100.0%

WINFIELD STATE HOSPITAL & TRAINING CENTER, AGENCY 713

COUNTY*	EMPLOYEES	% OF TOTAL
COWLEY	692	90.9%
SUMNER	30	3.9%
ELK	14	1.8%
SEDGWICK	11	1.4%
BUTLER	6	0.8%
CHAUTAUQUA	2	0.3%
MONTGOMERY	1	0.1%
OUT OF STATE	5	0.7%
TOTAL EMPLOYEES	761	100.0%

*Based on city of residence as reported by employees.

Source: Kansas Department of Social and Rehabilitative Services.

Compiled by CEDBR, Wichita State University

**TABLE 2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

KANSAS NEUROLOGICAL INSTITUTE, TOPEKA, AGENCY 363

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
SHAWNEE	79,496	699	0.9%
OSAGE	6,671	23	0.3%
WABAUNSEE	3,071	13	0.4%
DOUGLAS	40,660	10	0.0%
JEFFERSON	7,436	10	0.1%
JACKSON	5,224	7	0.1%
WYANDOTTE	68,966	1	0.0%
POTTAWATOMIE	7,772	2	0.0%
NEMAHA	4,782	1	0.0%
MITCHELL	3,222	1	0.0%
FRANKLIN	9,975	1	0.0%
ELLIS	13,123	1	0.0%
LYON	16,413	1	0.0%
JOHNSON	193,006	2	0.0%
TOTAL EMPLOYEES	NA	772	NA

LARNED STATE HOSPITAL, LARNED, AGENCY 410

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
PAWNEE	3,385	668	19.7%
BARTON	13,786	100	0.7%
STAFFORD	2,232	18	0.8%
EDWARDS	1,708	17	1.0%
RUSH	1,726	11	0.6%
RICE	4,567	4	0.1%
ELLIS	13,123	2	0.0%
KIOWA	1,639	2	0.1%
NESS	1,854	2	0.1%
RUSSELL	3,408	2	0.1%
PHILLIPS	2,926	2	0.1%
FORD	12,929	1	0.0%
HODGEMAN	892	1	0.1%
MCPHERSON	13,356	1	0.0%
TOTAL EMPLOYEES	NA	831	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE 2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

OSAWATOMIE STATE HOSPITAL, OSAWATOMIE, AGENCY 494

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
MIAMI	10,943	384	3.5%
LINN	3,000	48	1.6%
FRANKLIN	9,975	40	0.4%
ANDERSON	3,405	33	1.0%
JOHNSON	193,006	29	0.0%
WYANDOTTE	68,966	4	0.0%
DOUGLAS	40,660	4	0.0%
BOURBON	6,082	3	0.0%
CLARK	1,183	3	0.3%
LEAVENWORTH	27,757	3	0.0%
CRAWFORD	14,768	2	0.0%
ALLEN	6,311	2	0.0%
BARBER	2,606	1	0.0%
LABETTE	10,293	1	0.0%
SHAWNEE	79,496	1	0.0%
WOODSON	1,546	1	0.1%
OUT OF STATE	NA	3	NA
TOTAL EMPLOYEES	NA	562	NA

PARSONS STATE HOSPITAL & TRAINING CENTER, PARSONS, AGENCY 507

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
LABETTE	10,293	450	4.4%
NEOSHO	7,426	40	0.5%
CRAWFORD	14,768	24	0.2%
MONTGOMERY	16,335	14	0.1%
CHEROKEE	8,612	5	0.1%
ALLEN	6,311	1	0.0%
OUT OF STATE	NA	1	NA
TOTAL EMPLOYEES	NA	535	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE 2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

RAINBOW MENTAL HEALTH FACILITY, KANSAS CITY, AGENCY 555

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
WYANDOTTE	68,966	54	0.1%
JOHNSON	193,006	41	0.0%
MIAMI	10,943	3	0.0%
DOUGLAS	40,660	1	0.0%
LEAVENWORTH	27,757	1	0.0%
SHAWNEE	79,496	1	0.0%
OUT OF STATE	NA	39	NA
TOTAL EMPLOYEES	NA	140	NA

TOPEKA STATE HOSPITAL, TOPEKA, AGENCY 664

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
SHAWNEE	79,496	469	0.6%
DOUGLAS	40,660	26	0.1%
OSAGE	6,671	18	0.3%
WABAUNSEE	3,071	14	0.5%
JACKSON	5,224	12	0.2%
JEFFERSON	7,436	12	0.2%
POTTAWATOMIE	7,772	7	0.1%
LYON	16,413	2	0.0%
NEMAHA	4,782	1	0.0%
COFFEY	3,833	1	0.0%
RILEY	35,438	1	0.0%
GEARY	14,517	1	0.0%
ATCHISON	7,173	1	0.0%
OUT OF STATE	NA	1	NA
TOTAL EMPLOYEES	NA	566	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE 2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

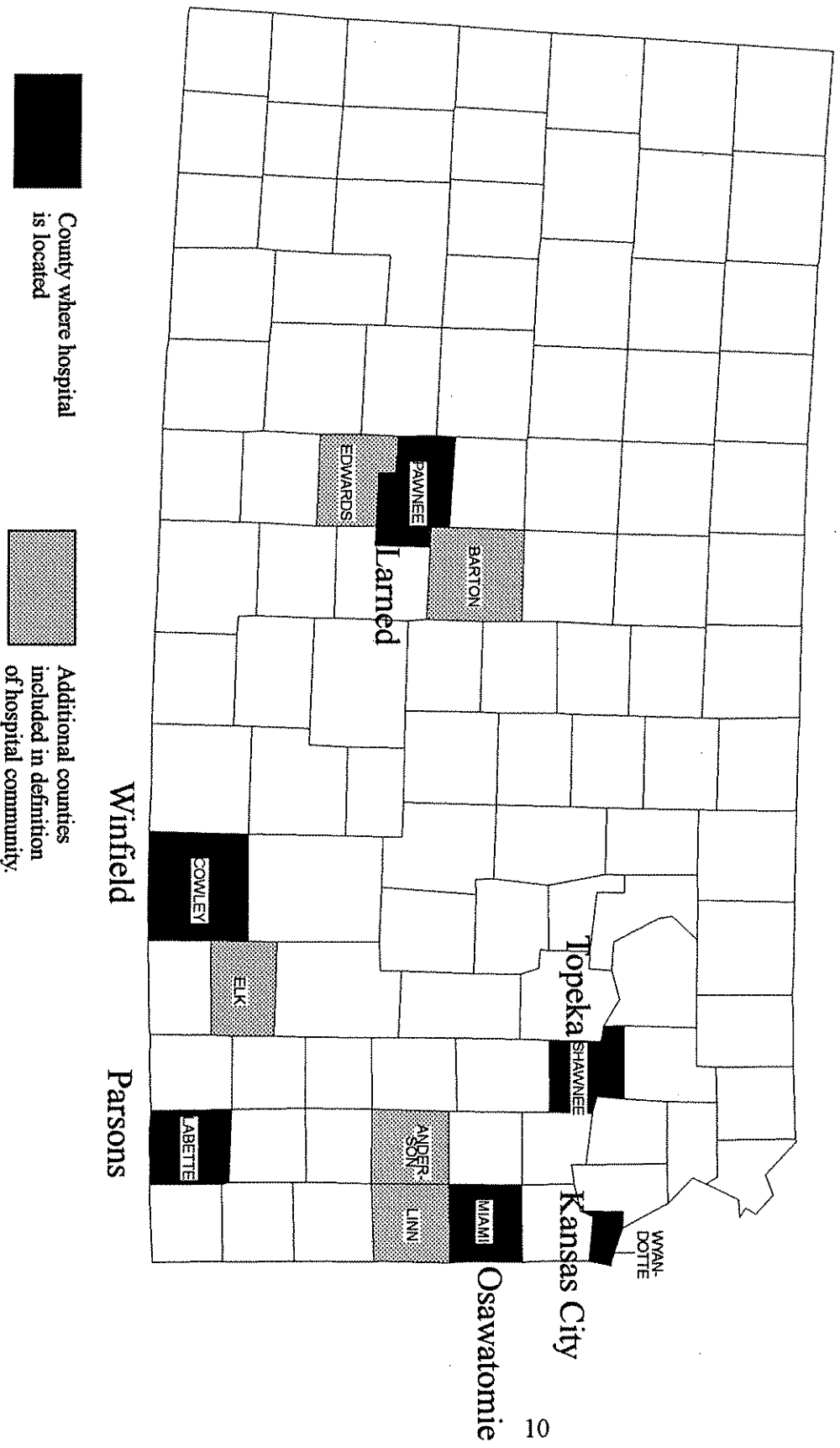
WINFIELD STATE HOSPITAL & TRAINING CENTER, AGENCY 713

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
COWLEY	16,202	692	4.3%
SUMNER	11,328	30	0.3%
SEDGWICK	198,261	11	0.0%
ELK	1,316	14	1.1%
BUTLER	23,693	6	0.0%
CHAUTAUQUA	1,596	2	0.1%
MONTGOMERY	16,335	1	0.0%
OUT OF STATE	NA	5	NA
TOTAL EMPLOYEES	NA	761	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Chart 1. Kansas Mental Health and Mental Retardation Hospitals



III. Estimated Economic Impact of Hospital Closure²

Aims and Methods of the Analysis

This study estimates the impact of hospital closure on the county economy using eleven county level input-output models. These models are based on IPPBR's statewide Kansas input-output model. They have been customized to each county using the location quotient method and various supplemental data sources. The goal of the estimation is to measure the amount of county income, employment, sales tax revenue and property tax revenue which hospital spending creates in the community. There is no attempt to measure efficiency of hospital operations or effectiveness of the hospital programs. The size of hospital closure impacts on the community economy should not be interpreted as an implicit recommendation to close any particular hospital. This study provides only a small part of the information needed to determine which hospitals should be closed.

IPPBR constructed two versions of the economic model for all eleven counties. We did this because of concern about the number of commuters reported by the 1990 US Census for Wyandotte county. In one version of the model, the census data for commuting is used for all of the counties. In the other version, we assumed that every non-hospital employee lives in the same county in which they work. This increased the economic impact of hospital expenditures for all of the hospitals in all counties, but proportionally much more for Rainbow in Wyandotte. Both sets of results are reported.

Income Measurement

One way to measure the impact of hospital closure on the community is to estimate the decrease in income generated in the community. The estimated changes in county income from hospital closure are given in Tables 3 and 4, pages 14 & 15. (Examples in the text refer to Scenario 1, commuting patterns based on census data.) There are several channels through which hospital closure will affect county income. The county loses income directly because county residents lose their jobs at the hospital. The amount for each hospital is reported in column 3 of the table. For these hospitals, community payrolls range from \$19,840,915 for Winfield State Hospital to \$1,956,927 for Rainbow Mental Health Facility.³

County citizens also lose income because of reduced local purchases by the former employees of the hospital and the elimination of purchases by the hospital itself. These are the indirect effect of hospital closure on county income. The effect of reduced purchases by former hospital employees is summarized by the income multiplier. The multiplier shows the total change

² This section authored by Neal Becker, IPPBR, University of Kansas.

³ Based on data supplied by the Ks. Department of Social and Rehabilitative Services. It is total compensation and it includes wages and salaries, advances and bonuses, KPERS contribution of employers, Social Security contributions of employers, group health insurance paid by employers, workers' compensation and unemployment insurance paid by employers. This is consistent with base income data from other sources such as Bureau of Economic Analysis.

in county income from a one dollar change in hospital employee compensation. The multiplier is greater than one because hospital employee spending in the county creates income for others in the county. Multipliers for county income are relatively low compared to state or national multipliers because county residents are more likely to spend a higher proportion of their income on goods and services produced outside the county than state citizens are likely to spend on goods and services produced outside the state or national citizens spend on goods and services produced outside the country. When the census data concerning commuting is used, the multipliers range from about 1.1 to 1.5, roughly increasing with county population. This range increases to about 1.2 to 1.6 when no commuting across counties is assumed.

The loss of income due to reduced hospital purchases is reported in column 2. This is calculated on a sector by sector basis. (See Appendix B for a description of the matrix multipliers used in the study.) It is much smaller than the direct or indirect effects of hospital payroll. Hospitals purchase between \$687,000 and \$4,141,232 in the counties in which they are located, but relatively little is turned into county compensation. Winfield State Hospital expenditures of \$687,072, for example, created \$201,876 of compensation.⁴ The income created is much less than the level of expenditure because many of the goods and services that the hospitals purchase use inputs that are imported into the county. When the assumption of no commuting across county lines is used, the additional county income created by hospital purchases increases slightly for most hospitals, but significantly for Rainbow Mental Health Center.

Some of the purchasing information may be influenced by one time capital expenditures. Because the spending data did not distinguish between ongoing and one time expenditures, no adjustments to hospital purchases were made. We also did not have separate purchasing data for Larned State Hospital and the Larned Youth Center because the process of accounting for the Youth Center separately was just implemented this fiscal year. Their purchases are commingled with the data for Larned State Hospital. This in part explains the unusually high level of local purchases listed for Larned State Hospital.

The model was also designed to include the effects of indirect income changes in the county in which the hospital is located on income of people who live in the other communities. This captures the loss of income of non-hospital employees who work in the county in which the hospital is located but live in other counties in the community. This amount was always small, reaching its largest value of \$7,185 in Barton county due to Larned State Hospital's spending.

The total effect of hospital closure on community income is given in column 9 of the table. These range from a high of \$27,742,995 for the Kansas Neurological Institute to a low of \$2,602,749 for the Rainbow Mental Health Facility. This range increases to \$29,968,197 to \$3,421,775 when no cross-county commuting is assumed. In general, the larger the hospital payroll, the larger the absolute impact a hospital in a region has on income. Exceptions arise because each dollar of hospital spending creates more income in a more densely populated county than in a sparsely populated one. This effect can be seen by comparing total income lost for the Kansas Neurological Institute and Winfield State Hospital. Even though Winfield State Hospital's

⁴ Purchase data was supplied by the Kansas Department of Social and Rehabilitative Services and includes contract labor.

local payroll plus expenditures is higher than the Kansas Neurological Institute's, the total impact on county income is lower because citizens of Cowley and Elk counties spend proportionally less on goods and services produced in the county than do citizens of Shawnee County.

Share of Income Impacted

Columns 11 and 12 show the share of direct and total income impact. The total shares range from a high of 4.5 percent for both Larned Agencies to a low of 0.1 percent for the Rainbow Mental Health Facility.

Table 3. Estimated Income Impact of Hospital Closure

Scenario 1a

Column Number	1	2	3	4	5	6	7	8	9	10	11	12
	Hospital expenditures on goods & services within county	Change in county income due to loss of hospital expenditures	Total hospital compensation to citizens of county	County Income Multiplier	Change in county income due to loss of hospital payrolls	Total indirect change in county income	County to County Income Multiplier	Change in secondary county income due to loss of income in primary county	Total loss of income in the county	Total Personal Income of Residents**	SHARE OF TOTAL INCOME Share of Direct Income***	Share of Total Income
Kansas Neurological Institute, Agency 363												
Community Total	\$1,188,592	\$628,553	\$18,529,806	1.4633	\$27,114,443	\$9,213,189		\$0	\$27,742,995	\$3,363,067,000	0.6%	0.8%
Shawnee	\$1,188,592	\$628,553	\$18,529,806	1.4633	\$27,114,443	\$9,213,189		\$0	\$27,742,995	\$3,363,067,000	0.6%	0.8%
Larned State Hospital, Agency 410												
Community Total	\$4,502,465	\$2,510,160	\$24,017,824	NA	\$28,899,939	\$7,392,275		\$9,898	\$31,419,997	\$776,182,000	3.1%	4.0%
Pawnee	\$4,141,232	\$2,282,388	\$20,540,174	1.1885	\$24,412,941	\$6,135,135		\$0	\$26,695,329	\$160,462,000	12.8%	16.6%
Barton	\$360,322	\$227,393	\$2,962,652	1.3113	\$3,885,044	\$1,149,785	0.0084	\$9,642	\$4,122,079	\$527,955,000	0.6%	0.8%
Edwards	\$911	\$380	\$514,998	1.1688	\$601,953	\$87,335	0.0029	\$256	\$602,589	\$87,765,000	0.6%	0.7%
Larned Youth Center, Agency 412												
Community Total			\$2,796,166	NA	\$3,414,397	\$618,231		\$1,935	\$3,416,332	\$776,182,000	0.4%	0.4%
Pawnee			\$2,054,884	1.1885	\$2,442,324	\$367,440		\$0	\$2,442,324	\$160,462,000	1.3%	1.3%
Barton			\$741,282	1.3113	\$972,072	\$230,791	0.0084	\$1,935	\$974,008	\$527,955,000	0.1%	0.2%
Edwards			\$0	1.1688	\$0	\$0	0.0029	\$0	\$0	\$87,765,000	0.0%	0.0%
Both Larned Agencies												
Community Total	\$4,502,465	\$2,510,160	\$26,813,990	NA	\$32,314,336	\$8,010,506		\$11,834	\$34,836,329	\$776,182,000	3.5%	4.5%
Pawnee	\$4,141,232	\$2,282,388	\$22,995,038	NA	\$26,855,266	\$6,342,996		\$0	\$29,137,654	\$160,462,000	14.1%	18.2%
Barton	\$360,322	\$227,393	\$3,703,934	NA	\$4,897,117	\$1,380,575	0.0057	\$11,578	\$5,096,087	\$527,955,000	0.7%	1.0%
Edwards	\$911	\$380	\$514,998	NA	\$601,953	\$87,335	0.0033	\$256	\$602,589	\$87,765,000	0.6%	0.7%
Cherokee State Hospital, Agency 494												
Community Total	\$718,519	\$316,207	\$13,747,523	NA	\$16,093,346	\$2,662,029		\$1,786	\$16,411,339	\$652,425,000	2.1%	2.5%
Miami	\$707,718	\$311,535	\$11,237,757	1.1725	\$13,176,191	\$2,249,970		\$0	\$13,486,726	\$411,360,000	2.7%	3.3%
Linn	\$7,120	\$3,819	\$1,371,388	1.1289	\$1,548,219	\$180,630	0.0057	\$1,022	\$1,553,060	\$123,525,000	1.1%	1.3%
Anderson	\$3,681	\$853	\$1,138,378	1.2025	\$1,368,935	\$231,410	0.0033	\$765	\$1,370,553	\$117,539,000	1.0%	1.2%
Parsons State Hospital, Agency 507												
Community Total	\$710,147	\$230,940	\$12,980,048	1.1804	\$15,321,038	\$2,571,930		\$0	\$15,551,978	\$362,677,000	3.6%	4.3%
Labette	\$710,147	\$230,940	\$12,980,048	1.1804	\$15,321,038	\$2,571,930		\$0	\$15,551,978	\$362,677,000	3.6%	4.3%
Rainbow Mental Health Facility, Agency 555												
Community Total	\$750,467	\$256,326	\$1,956,927	1.1990	\$2,346,422	\$645,821		\$0	\$2,602,749	\$2,426,692,000	0.1%	0.1%
Wyandotte	\$750,467	\$256,326	\$1,956,927	1.1990	\$2,346,422	\$645,821		\$0	\$2,602,749	\$2,426,692,000	0.1%	0.1%
Topolia State Hospital, Agency 664												
Community Total	\$3,219,838	\$2,208,850	\$14,708,814	1.4633	\$21,523,231	\$9,023,267		\$0	\$23,732,081	\$3,363,067,000	0.4%	0.7%
Shawnee	\$3,219,838	\$2,208,850	\$14,708,814	1.4633	\$21,523,231	\$9,023,267		\$0	\$23,732,081	\$3,363,067,000	0.4%	0.7%
Both Topolia Agencies												
Community Total	\$4,408,430	\$2,837,403	\$33,238,620	1.4633	\$48,637,673	\$18,236,457		\$0	\$51,475,077	\$3,363,067,000	1.0%	1.5%
Shawnee	\$4,408,430	\$2,837,403	\$33,238,620	1.4633	\$48,637,673	\$18,236,457		\$0	\$51,475,077	\$3,363,067,000	1.0%	1.5%
Winfield State Hospital, Agency 713												
Community Total	\$687,567	\$202,118	\$19,340,915	NA	\$23,581,082	\$3,942,285		\$19	\$23,783,219	\$662,231,000	3.0%	3.6%
Cowley	\$687,567	\$202,118	\$19,340,915	NA	\$23,581,082	\$3,942,285		\$0	\$23,451,193	\$611,024,000	3.2%	3.8%
Elk	\$495	\$242	\$387,752	1.1530	\$331,765	\$44,235	0.0004	\$19	\$332,026	\$51,207,000	0.6%	0.6%

* Assumes a percentage of persons continue to work outside their county of residence (percentages based on 1990 census data).
 ** Total personal income of residents, U.S. Bureau of Economic Analysis.
 *** Direct income is equal to total hospital compensation to citizens of the county.

Source: IPPBR, University of Kansas

Table 4. Estimated Income Impact of Hospital Closure
Scenario 2*

Column Number	1	2	3	4	5	6	7	8	9	10	11	12
	Hospital expenditures on goods & services within county	Change in county income due to loss of hospital expenditures	Total hospital compensation to citizens of county	County Income Multiplier	Change in county income due to loss of hospital payoffs	Total indirect in county income	County to County Income multiplier	Change in secondary county income due to loss of income in primary county	Total loss of income in the county	Total Personal Income of Residents**	SHARE OF TOTAL INCOME Share of Direct Income***	Share of Total Income
Kansas Neurological Institute, Agency 363												
Community Total	\$1,188,592	\$797,983	\$18,529,806	1.5742	\$29,170,213	\$11,438,391		\$0	\$29,968,197	\$3,363,067,000	0.6%	0.9%
Shawnee	\$1,188,592	\$797,983	\$18,529,806	1.5742	\$29,170,213	\$11,438,391		\$0	\$29,968,197	\$3,363,067,000	0.6%	0.9%
Larned State Hospital, Agency 410												
Community Total	\$4,302,465	\$2,857,346	\$24,017,824	NA	\$29,391,630	\$8,231,153		\$0	\$32,248,977	\$776,182,000	3.1%	4.2%
Paynee	\$4,141,232	\$2,602,893	\$20,540,174	1.2078	\$24,807,826	\$6,870,566		\$0	\$27,410,719	\$160,462,000	12.8%	17.1%
Barton	\$360,322	\$254,009	\$3,962,652	1.3417	\$3,975,038	\$1,266,394	0.0084	\$0	\$4,229,046	\$527,955,000	0.6%	0.8%
Edwards	\$911	\$444	\$314,998	1.1821	\$608,766	\$94,213	0.0029	\$0	\$609,211	\$87,765,000	0.6%	0.7%
Larned Youth Center, Agency 412												
Community Total			\$2,796,166	NA	\$3,476,419	\$680,253		\$0	\$3,476,419	\$776,182,000	0.4%	0.4%
Paynee			\$2,054,884	1.2078	\$2,481,830	\$426,945		\$0	\$2,481,830	\$160,462,000	1.3%	1.5%
Barton			\$741,282	1.3417	\$994,590	\$253,308	0.0084	\$0	\$994,590	\$527,955,000	0.1%	0.2%
Edwards			\$0	1.1821	\$0	\$0	0.0029	\$0	\$0	\$87,765,000	0.0%	0.0%
Both Larned Agencies												
Community Total	\$4,302,465	\$2,857,346	\$26,813,990	NA	\$32,868,069	\$8,911,406		\$0	\$35,725,396	\$776,182,000	3.5%	4.6%
Paynee	\$4,141,232	\$2,602,893	\$22,995,038	2.4155	\$27,289,656	\$7,297,491		\$0	\$29,892,549	\$160,462,000	14.1%	18.6%
Barton	\$360,322	\$254,009	\$3,705,934	2.6834	\$4,969,627	\$1,519,702		\$0	\$5,223,636	\$527,955,000	0.7%	1.0%
Edwards	\$911	\$444	\$314,998	2.3642	\$608,766	\$94,213		\$0	\$609,211	\$87,765,000	0.6%	0.7%
Oswawatomie State Hospital, Agency 494												
Community Total	\$718,519	\$408,921	\$13,747,523	NA	\$16,547,488	\$3,208,885		\$0	\$16,956,409	\$652,425,000	2.1%	2.6%
Miami	\$707,718	\$402,857	\$11,237,757	1.2079	\$13,574,030	\$2,739,131		\$0	\$13,976,887	\$411,360,000	2.7%	3.4%
Linn	\$5,109	\$3,109	\$1,371,388	1.1550	\$1,584,017	\$217,738	0.0057	\$0	\$1,589,126	\$123,528,000	1.1%	1.3%
Anderson	\$3,681	\$954	\$1,138,378	1.2205	\$1,389,441	\$252,017	0.0033	\$0	\$1,390,395	\$117,539,000	1.0%	1.2%
Parsons State Hospital, Agency 507												
Community Total	\$710,147	\$287,612	\$12,980,048	1.2119	\$15,730,935	\$3,038,499		\$0	\$16,018,547	\$62,677,000	3.6%	4.4%
Labette	\$710,147	\$287,612	\$12,980,048	1.2119	\$15,730,935	\$3,038,499		\$0	\$16,018,547	\$62,677,000	3.6%	4.4%
Rainbow Menial Health Facility, Agency 555												
Community Total	\$750,467	\$641,788	\$1,956,927	1.4206	\$2,779,987	\$1,464,848		\$0	\$3,421,775	\$2,426,652,000	0.1%	0.1%
Wyandotte	\$750,467	\$641,788	\$1,956,927	1.4206	\$2,779,987	\$1,464,848		\$0	\$3,421,775	\$2,426,652,000	0.1%	0.1%
Topeka State Hospital, Agency 664												
Community Total	\$3,219,838	\$2,804,260	\$14,708,814	1.5742	\$23,155,085	\$11,250,531		\$0	\$25,959,345	\$3,363,067,000	0.4%	0.8%
Shawnee	\$3,219,838	\$2,804,260	\$14,708,814	1.5742	\$23,155,085	\$11,250,531		\$0	\$25,959,345	\$3,363,067,000	0.4%	0.8%
Both Topeka Agencies												
Community Total	\$4,408,430	\$3,602,243	\$33,238,620	1.5742	\$52,325,299	\$22,688,922		\$0	\$55,927,542	\$3,363,067,000	1.0%	1.7%
Shawnee	\$4,408,430	\$3,602,243	\$33,238,620	1.5742	\$52,325,299	\$22,688,922		\$0	\$55,927,542	\$3,363,067,000	1.0%	1.7%
Winfield State Hospital, Agency 713												
Community Total	\$687,567	\$225,403	\$19,840,915	NA	\$23,894,513	\$4,279,002		\$0	\$24,119,917	\$662,231,000	3.0%	3.6%
Cowley	\$687,072	\$225,125	\$19,553,163	1.2048	\$23,538,394	\$4,230,355		\$0	\$23,783,519	\$611,024,000	3.2%	3.9%
EK	\$495	\$279	\$387,752	1.1681	\$336,119	\$48,646	0.0004	\$0	\$336,398	\$51,207,000	0.6%	0.7%

* Assumes everyone lives and works in the same county except hospital employees.
 ** Total personal income of residents, U.S. Bureau of Economic Analysis.
 *** Direct income is equal to total hospital compensation to citizens of the county.

Source: IPPBR, University of Kansas

Employment Measures

An alternative way to measure the impact of hospital closure on the county is to measure jobs lost due to the closure. These estimates are given in Tables 5 and 6. (Discussion focuses on Table 5, Scenario 1.) These effects can also be broken down into direct and indirect effects. The direct effects on employment are the losses of jobs at the hospital. The county employment ranges from 691 at Winfield State Hospital to 87 for Rainbow.⁵ This distribution of employment reflects hospital personnel at a particular point in time, and might change slightly with the normal level of employee turnover.

Hospital closure also has indirect effects on employment for the community. The largest indirect effect comes from local private employers reducing the number of employees due to reduced county demand for goods and services. These amounts are reported in column 2. They range from 386 for Topeka State Hospital to 40 for Rainbow. County government employment is also affected by the change in county income. This number is always much smaller than the other sources of employment loss, ranging from 3 for Rainbow to 69 for both Larned agencies in Pawnee.

The total estimated effect of hospital closure on employment is given in column 4. The values range from 1,096 individuals losing jobs if the Kansas Neurological Institute is closed to 130 for Rainbow Mental Health Facility. The employment effects of hospital closure can be summarized by looking at the implicit employment multiplier. This number is the ratio of direct jobs lost to total jobs lost. These differ even for some hospitals in the same county. The Kansas Neurological Center's employment multiplier is 1.59 while the Topeka State Hospital's is 1.91. Agencies with the high multipliers have a significantly higher average compensation level than the agencies in the county with the low multipliers. The employment multipliers increase when the no commuter assumption is used. The average employment multiplier increases by 7.0 percent, but Rainbow's employment multiplier increases by 21.6 percent.

Share of Employment Impacted

Columns 7 and 8 show the share of direct and total employed impacted as a percent of total employed residents. The totals range from a high of 6.9 percent when both Larned Agencies are included (30.9 percent for Pawnee County) to a low of 0.2 percent for the Rainbow Mental Health Facility.

⁵ Employment figures are people employed by the hospital and living in county or community. Total hospital employees may be larger, because some people live in counties outside of the defined "community".

Table 5. Estimated Employment Impact of Hospital Closure
Scenario 1*

Column Number	1	2	3	4	5	6	7	8
Agency	DIRECT Hospital Staff Ave. 1995	INDIRECT change in non-government employment	change in government employment	TOTAL change in employment	Implicit multiplier	Total Employed Residents**	SHARE OF TOTAL EMPLOYED Direct Impact	Total Impact
Kansas Neurological Institute, Agency 363								
Community Total	688	375	33	1,096	1.593	84,722	0.8%	1.3%
Shawnee	688	375	33	1,096	1.593	84,722	0.8%	1.3%
Larned State Hospital, Agency 410								
Community Total	773	392	62	1,228	1.588	19,988	3.9%	6.1%
Pawnee	654	328	55	1,037	1.586	3,686	17.7%	28.1%
Barton	101	60	6	167	1.656	14,496	0.7%	1.2%
Edwards	18	4	1	23	1.272	1,806	1.0%	1.3%
Larned Youth Center, Agency 412								
Community Total	110	29	6	146	1.324	19,988	0.6%	0.7%
Pawnee	80	18	5	103	1.284	3,686	2.2%	2.8%
Barton	30	12	1	43	1.453	14,496	-0.2%	0.3%
Edwards	0	0	0	0	0.000	1,806	0.0%	0.0%
Both Larned Agencies								
Community Total	883	421	69	1,373	1.555	19,988	4.4%	6.9%
Pawnee	734	346	60	1,140	1.553	3,686	19.9%	30.9%
Barton	131	72	7	210	1.605	14,496	0.9%	1.5%
Edwards	18	4	1	23	1.272	1,806	1.0%	1.3%
Oswatomie State Hospital, Agency 494								
Community Total	455	137	26	618	1.357	18,834	2.4%	3.3%
Miami	375	117	20	513	1.367	12,044	3.1%	4.3%
Linn	48	6	3	57	1.185	3,026	1.6%	1.9%
Arderson	32	14	2	48	1.501	3,764	0.9%	1.3%
Parsons State Hospital, Agency 567								
Community Total	447	130	23	600	1.342	9,765	4.6%	6.1%
Labette	447	130	23	600	1.342	9,765	4.6%	6.1%
Rainbow Mental Health Facility, Agency 555								
Community Total	87	40	3	130	1.495	73,160	0.1%	0.2%
Wyandotte	87	40	3	130	1.495	73,160	0.1%	0.2%
Topeka State Hospital, Agency 664								
Community Total	456	386	28	870	1.908	84,722	0.5%	1.0%
Shawnee	456	386	28	870	1.908	84,722	0.5%	1.0%
Both Topeka Agencies								
Community Total	1,144	762	60	1,966	1.719	84,722	1.4%	2.3%
Shawnee	1,144	762	60	1,966	1.719	84,722	1.4%	2.3%
Winfield State Hospital, Agency 713								
Community Total	705	168	37	910	1.291	18,218	3.9%	5.0%
Cowley	691	166	36	893	1.293	16,918	4.1%	5.3%
Elk	14	2	1	17	1.204	1,300	1.1%	1.3%

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).
 ** Total employed residents Civilian Labor Force data 1994, KDHR.

Source: IPPBR, University of Kansas

Table 6. Estimated Employment Impact of Hospital Closure
Scenario 2*

Column Number	1	2	3	4	5	6	7		8
Agency	DIRECT Hospital Staff Avg. 1995	change in non-government employment	INDIRECT change in government employment	TOTAL change in employment	Implicit multiplier	Total Employed Residents**	Direct Impact	Total Impact	
Kansas Neurological Institute, Agency 363									
Community Total	688		471	1,194	1.736	84,722	0.8%	1.4%	
Shawnee	688		471	1,194	1.736	84,722	0.8%	1.4%	
Larned State Hospital, Agency 410									
Community Total	773		426	1,263	1.634	19,988	3.9%	6.3%	
Pawnee	654		356	1,066	1.630	3,686	17.7%	28.9%	
Barton	101		66	173	1.715	14,496	0.7%	1.2%	
Edwards	18		4	23	1.296	1,806	1.0%	1.3%	
Larned Youth Center, Agency 412									
Community Total	110		33	150	1.360	19,988	0.6%	0.7%	
Pawnee	80		20	105	1.316	3,686	2.2%	2.9%	
Barton	30		13	44	1.479	14,496	0.2%	0.3%	
Edwards	0		0	0	0.000	1,806	0.0%	0.0%	
Both Larned Agencies									
Community Total	883		459	1,412	1.600	19,988	4.4%	7.1%	
Pawnee	734		376	1,172	1.596	3,686	19.9%	31.8%	
Barton	131		79	218	1.661	14,496	0.9%	1.5%	
Edwards	18		4	23	1.296	1,806	1.0%	1.3%	
Osawatimie State Hospital, Agency 494									
Community Total	455		168	650	1.428	18,834	2.4%	3.4%	
Miami	375		145	541	1.443	12,044	3.1%	4.5%	
Linn	48		8	59	1.227	3,026	1.6%	1.9%	
Anderson	32		15	50	1.553	3,764	0.9%	1.3%	
Parsons State Hospital, Agency 507									
Community Total	447		159	629	1.408	9,765	4.6%	6.4%	
Labette	447		159	629	1.408	9,765	4.6%	6.4%	
Rainbow Mental Health Facility, Agency 555									
Community Total	87		67	158	1.818	73,160	0.1%	0.2%	
Wyandotte	87		67	158	1.818	73,160	0.1%	0.2%	
Topeka State Hospital, Agency 664									
Community Total	456		470	956	2.097	84,722	0.5%	1.1%	
Shawnee	456		470	956	2.097	84,722	0.5%	1.1%	
Both Topeka Agencies									
Community Total	1,144		941	2,151	1.880	84,722	1.4%	2.5%	
Shawnee	1,144		941	2,151	1.880	84,722	1.4%	2.5%	
Winfield State Hospital, Agency 713									
Community Total	705		187	929	1.318	18,218	3.9%	5.1%	
Cowley	691		184	912	1.320	16,918	4.1%	5.4%	
Elk	14		3	17	1.228	1,300	1.1%	1.3%	

*Assumes everyone lives and works in the same county except hospital employees.
**Total employed residents Civilian Labor Force data 1994, KDHR.

Source: IPPBR, University of Kansas

Important Simplifying Assumptions

All models make simplifying assumptions so that generalizations may be drawn. These assumptions may, in particular cases, fail to reflect the true state of the county economy. This section reports on the most significant assumptions used to construct these models and the likely effects on the results if these assumptions do not reflect each county's economy.

The estimated effects of hospital closure on each county are based on individual county level input-output models. While surveying county business is the best way to construct such models, neither the budget or the time frame for the study allowed survey methods to be used. Instead, the models are based on the IPPBR's state-wide Kansas input-output model, customized to each county. While the model accurately represents the available data, county level models are very vulnerable to changes in county economic structure. Over time new firms open and existing ones close. Over large economic units, like states or countries, these changes would tend to cancel each other out. In sparsely populated counties, the normal flow of business creation and destruction could significantly change the economic structure of the county. These structural changes would affect hospital spending and employment multipliers in unpredictable directions.

A related problem is that the hospital closure itself could affect the county economic structure or future growth rates of the county. Local suppliers who get much of their business from hospital purchases, or retailers for whom hospital employees are a significant percentage of their customers, might have to close if the hospital closes. The resulting change in county structure would lower the multiplicative effects of the remaining county income, increasing the cost of hospital closure on the county. This decrease in local business might also lower the future growth of the county, further increasing the cost of closure. This is more likely to be a problem in sparsely populated counties, so the model estimates are likely to disproportionately understate the impact of hospital closure on the less populated counties.

There are also a number of modeling decisions that were based on data limitations or time constraints. The most important of these decisions was what assumptions to make about former hospital employees. In order to simplify the model, we assumed that all former hospital employees left the county in which they had resided. In actuality former hospital employees may do one of several things in the long run: leave the county, take another job in the county, stay in the county but leave the work force, or stay in the county but commute to a neighboring county. The first two possibilities are consistent with the model. If a former hospital employee takes a county job, someone from in the county who would have taken that job would leave the county or a person outside the county who would have taken the county job does not move into the county. In either case, the county still has one fewer person than it would have if the hospital employee were still employed by the hospital.

The third possibility is also consistent with the modeling assumption if the person that leaves the labor force has no other source of income. To the degree that people leave the labor force and have outside sources of income, the model overstates the impact of hospital closure on county income by overstating the loss in county demand for goods and services. The same is true if former hospital employees remain in the county but find employment in another county. They

will tend to spend their income in the county of residence, so our model would overestimate the cost of closure on these grounds as well.

Additionally, the method estimates impact at the local level only. This is consistent with the charge to the HCC. It should, however, be noted that this is different than looking at the economic impact to the state. Multipliers, as noted above, are sensitive to the place of origin of inputs such as labor, equipment, and materials. If an entity buys most of its goods outside of its home county, but within the state, then the impact on the county will be less than at the state level.

Finally, it should be noted that economic impact models typically analyze long-run impacts, and do not specifically address the time-path of adjustment. In other words, the model does not distinguish between swift and gradual changes.

Sales Tax Revenue Estimates

Tables 7 and 8 show the estimates of the impact on local sales tax revenues. Local sales tax generated by hospital expenditure in the county is estimated by taking the change in county personal income times the ratio of 1994 county and city sales tax to 1994 county income. This is reported in column 3. It ranges from a high of \$137,925 for Kansas Neurological Institute to a low of \$12,464 for the Larned Youth Center. The numbers are slightly higher when no intercounty commuting is assumed. These estimates represent sales tax receipts on a weighted average of the tax rates within a county.

Property Tax Revenue Estimates

Property tax generated by hospital expenditure in the county is modeled in two parts, residential and commercial. First, property taxes raised by taxing non-farm residential property are calculated by constructing a county property tax rate on county income. It is necessary to model the impact on residential property because a hospital closure could be expected to reduce the residential property tax base by lowering the value of existing housing and decreasing the construction of new houses in the county. Secondly, property taxes raised by taxing commercial property are calculated by constructing a county level tax on capital and multiplying it times the estimated reduction in county capital that would occur with closure. Hospital closure could be expected to reduce the business property tax base because, all else equal, with less income available to support business some business will decline. Some will sell existing property. Some of the sales, particularly of personal property, would leave the county. Additionally, fewer new business will open than could have been expected if the hospital remained open. These figures are also best thought of as weighted averages of the effects on the counties. Results are shown in Tables 9 and 10. They range from a high of \$591,179 for Kansas Neurological Hospital to a low of \$73,699 for Rainbow Mental Health Facility, from \$678,073 to \$93,711 when no commuting is assumed.

Table 7. Estimated Impact on Sales Tax Revenues
Scenario 1*

Column Number	1 Change in Local Income	2 County and City Tax Divided By County Income	3 Total Change in Sales tax Revenue
Kansas Neurological Institute, Agency 363			
Community Total	\$27,742,995	0.00497	\$137,925
Shawnee	\$27,742,995	0.00497	\$137,925
Larned State Hospital, Agency 410			
Community Total	\$31,419,997	NA	\$99,144
Pawnee	\$26,695,329	0.00276	\$73,792
Barton	\$4,122,079	0.00587	\$24,177
Edwards	\$602,589	0.00195	\$1,175
Larned Youth Center, Agency 412			
Community Total	\$3,416,332	NA	\$12,464
Pawnee	\$2,442,324	0.00276	\$6,751
Barton	\$974,008	0.00587	\$5,713
Edwards	\$0	0.00195	\$0
Both Larned Agencies, 410 & 412			
Community Total	\$34,836,329	NA	\$111,608
Pawnee	\$29,137,653	NA	\$80,543
Barton	\$5,096,087	NA	\$29,890
Edwards	\$602,589	NA	\$1,175
Oswatomie State Hospital, Agency 494			
Community Total	\$16,411,339	NA	\$73,717
Miami	\$13,487,726	0.00506	\$68,292
Linn	\$1,553,060	0.00036	\$562
Anderson	\$1,370,553	0.00355	\$4,862
Persons State Hospital, Agency 507			
Community Total	\$15,551,978	0.00582	\$90,554
Labette	\$15,551,978	0.00582	\$90,554
Rainbow Mental Health Facility, Agency 555			
Community Total	\$2,602,749	0.00943	\$24,542
Wyandotte	\$2,602,749	0.00943	\$24,542
Topeka State Hospital, Agency 664			
Community Total	\$23,732,081	0.00497	\$117,985
Shawnee	\$23,732,081	0.00497	\$117,985
Both Topeka Agencies, 363 & 664			
Community Total	\$51,475,076	0.00497	\$255,909
Shawnee	\$51,475,076	0.00497	\$255,909
Winfield State Hospital, Agency 713			
Community Total	\$23,783,219	NA	\$84,530
Cowley	\$23,451,193	0.00356	\$83,537
Blk	\$332,026	0.00299	\$993

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).

Source: IPPBR, University of Kansas

Table 8. Estimated Impact on Sales Tax Revenues
Scenario 2*

Column Number	1		2		3
	Change in Local Income	County and City Tax Divided by County Income	Total Change In Sales Tax Revenue		
Kansas Neurological Institute, Agency 363					
Community Total	\$29,968,197	0.00497	\$148,988		
Shawnee	\$29,968,197	0.00497	\$148,988		
Larned State Hospital Agency 410					
Community Total	\$32,248,978	NA	\$101,762		
Pawnee	\$27,410,720	0.00276	\$75,769		
Barton	\$4,229,047	0.00587	\$24,805		
Edwards	\$609,211	0.00195	\$1,188		
Larned Youth Center, Agency 412					
Community Total	\$3,476,419	NA	\$12,694		
Pawnee	\$2,481,830	0.00276	\$6,860		
Barton	\$994,690	0.00587	\$5,834		
Edwards	\$0	0.00195	\$0		
Both Larned Agencies, 410 & 412					
Community Total	\$35,725,397	NA	\$114,456		
Pawnee	\$29,892,550	NA	\$82,629		
Barton	\$5,223,636	NA	\$30,638		
Edwards	\$609,211	NA	\$1,188		
Osawatimie State Hospital, Agency 494					
Community Total	\$16,956,408	NA	\$76,277		
Miami	\$13,976,887	0.00506	\$70,769		
Lincoln	\$1,589,126	0.00036	\$575		
Anderson	\$1,390,395	0.00355	\$4,933		
Parsons State Hospital, Agency 507					
Community Total	\$16,018,547	0.00582	\$93,271		
Labette	\$16,018,547	0.00582	\$93,271		
Rainbow Mental Health Facility, Agency 555					
Community Total	\$3,421,775	0.00943	\$32,264		
Wyandotte	\$3,421,775	0.00943	\$32,264		
Topoka State Hospital, Agency 664					
Community Total	\$25,959,345	0.00497	\$129,057		
Shawnee	\$25,959,345	0.00497	\$129,057		
Both Topoka Agencies, 363 & 664					
Community Total	\$55,927,542	0.00497	\$278,045		
Shawnee	\$55,927,542	0.00497	\$278,045		
Winfield State Hospital, Agency 713					
Community Total	\$24,119,917	NA	\$85,727		
Cowley	\$23,783,519	0.00356	\$84,721		
Elk	\$336,398	0.00299	\$1,006		

* Assumes everyone lives and works in the same county except hospital employees.
Source: IPPBR, University of Kansas

Table 9. Estimated Impact on Property Tax Revenue

Column Number	1	2	3	4	5
	Scenario 1*				
	Change in Income	Property Tax Change for Residences	Change in Capital Required	Property Tax Change for Commercial	Total Change in Property Taxes
Kansas Neurological Institute, 363					
Community Total	\$27,742,995	\$426,797	\$2,949,358	\$164,382	\$591,179
Shawnee	\$27,742,995	\$426,797	\$2,949,358	\$164,382	\$591,179
Larned State Hospital, 410					
Community Total	\$31,419,997	\$530,996	\$3,026,945	\$136,151	\$667,147
Pawnee	\$26,695,329	\$456,802	\$2,529,797	\$112,023	\$568,825
Barton	\$4,122,079	\$65,018	\$465,160	\$22,842	\$87,860
Edwards	\$602,589	\$9,175	\$31,989	\$1,286	\$10,462
Larned Youth Center, 412					
Community Total	\$3,416,332	\$57,155	\$244,050	\$11,270	\$68,426
Pawnee	\$2,442,324	\$41,792	\$148,001	\$6,554	\$48,346
Barton	\$974,008	\$15,363	\$96,049	\$4,717	\$20,080
Edwards	\$0	\$0	\$0	\$0	\$0
Both Larned Youth Agencies, 410 & 412					
Community Total	\$34,836,329	\$588,151	\$3,270,995	\$147,421	\$735,572
Pawnee	\$29,137,653	\$498,594	\$2,677,798	\$118,577	\$617,171
Barton	\$5,096,087	\$80,382	\$561,209	\$27,558	\$107,940
Edwards	\$602,589	\$9,175	\$31,989	\$1,286	\$10,462
Oswatomie State Hospital, 494					
Community Total	\$16,411,339	\$182,093	\$1,398,162	\$61,872	\$243,965
Miami	\$13,487,726	\$149,368	\$1,187,690	\$52,593	\$201,960
Linn	\$1,553,060	\$14,217	\$91,776	\$4,507	\$18,724
Anderson	\$1,370,553	\$18,508	\$118,697	\$4,773	\$23,281
Parsons State Hospital, 507					
Community Total	\$15,551,978	\$229,421	\$1,229,606	\$56,107	\$285,528
Labette	\$15,551,978	\$229,421	\$1,229,606	\$56,107	\$285,528
Rainbow Mental Health Facility, 555					
Community Total	\$2,602,749	\$46,779	\$421,910	\$26,920	\$73,699
Wyardotte	\$2,602,749	\$46,779	\$421,910	\$26,920	\$73,699
Topeka State Hospital, 664					
Community Total	\$23,732,081	\$365,093	\$3,628,373	\$202,227	\$567,320
Shawnee	\$23,732,081	\$365,093	\$3,628,373	\$202,227	\$567,320
KS Neuro and Topeka State Hospital, 363 & 664					
Community Total	\$51,475,076	\$791,890	\$6,577,731	\$366,610	\$1,158,499
Shawnee	\$51,475,076	\$791,890	\$6,577,731	\$366,610	\$1,158,499
Winfield State Hospital, 713					
Community Total	\$23,783,219	\$369,606	\$1,545,055	\$47,943	\$417,549
Cowley	\$23,451,193	\$364,626	\$1,524,122	\$47,062	\$411,688
Elk	\$332,026	\$4,980	\$20,933	\$881	\$5,861

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).
Source: IPPBR, University of Kansas

Table 10. Estimated Impact On Property Tax Revenues
Scenario 2

Column Number	1	2	3	4	5
	Change in Income	Property Tax Change for Residences	Change in Capital Required	Property Tax Change for Commercial	Total Change in Property Taxes
Kansas Neurological Institute, 363					
Community Total	\$29,968,197	\$461,029	\$3,894,215	\$217,044	\$678,073
Shawnee	\$29,968,197	\$461,029	\$3,894,215	\$217,044	\$678,073
Larned State Hospital, 410					
Community Total	\$32,248,978	\$545,025	\$3,084,511	\$138,755	\$667,147
Pawnee	\$27,410,720	\$469,043	\$2,575,203	\$114,034	\$568,825
Barton	\$4,229,047	\$66,706	\$476,957	\$23,421	\$87,860
Edwards	\$609,211	\$9,276	\$32,351	\$1,301	\$10,462
Larned Youth Center, 412					
Community Total	\$3,476,420	\$58,156	\$248,667	\$11,485	\$69,642
Pawnee	\$2,481,830	\$42,468	\$150,393	\$6,660	\$49,128
Barton	\$994,590	\$15,688	\$98,274	\$4,826	\$20,514
Edwards	\$0	\$0	\$0	\$0	\$0
Both Larned Agencies, 410 & 412					
Community Total	\$35,725,398	\$603,181	\$3,333,178	\$150,241	\$736,788
Pawnee	\$29,892,550	\$511,512	\$2,725,596	\$120,693	\$617,953
Barton	\$5,223,637	\$82,393	\$575,231	\$28,247	\$108,374
Edwards	\$609,211	\$9,276	\$32,351	\$1,301	\$10,462
Oswatimie State Hospital, 494					
Community Total	\$16,956,408	\$188,108	\$1,439,538	\$63,707	\$251,815
Miami	\$13,976,887	\$154,785	\$1,225,133	\$54,251	\$209,035
Linn	\$1,589,126	\$14,547	\$93,938	\$4,613	\$19,160
Anderson	\$1,390,395	\$18,776	\$120,467	\$4,844	\$23,620
Parsons State Hospital, 507					
Community Total	\$16,018,547	\$236,304	\$1,262,978	\$57,630	\$293,934
Labette	\$16,018,547	\$236,304	\$1,262,978	\$57,630	\$293,934
Rainbow Mental Health Facility, 555					
Community Total	\$3,421,775	\$61,499	\$504,836	\$32,211	\$93,711
Wyandotte	\$3,421,775	\$61,499	\$504,836	\$32,211	\$93,711
Topeka State Hospital, 664					
Community Total	\$25,959,345	\$399,357	\$3,904,610	\$217,623	\$616,980
Shawnee	\$25,959,345	\$399,357	\$3,904,610	\$217,623	\$616,980
Both Topeka Agencies, 363 & 664					
Community Total	\$55,927,542	\$860,386	\$7,798,825	\$434,667	\$1,295,053
Shawnee	\$55,927,542	\$860,386	\$7,798,825	\$434,667	\$1,295,053
Winfield State Hospital, Agency 713					
Community Total	\$24,119,917	\$374,839	\$1,564,532	\$48,547	\$423,386
Cowley	\$23,783,519	\$369,793	\$1,543,322	\$47,655	\$417,448
Elk	\$336,398	\$5,046	\$21,210	\$892	\$5,938

* Assumes everyone lives and works in the same county except hospital employees.
Source: IPPBR, University of Kansas

IV. Community Profiles⁶

Introduction To Community Economic Profiles

The following section presents abbreviated profiles of each of the counties relevant to the communities within which the state hospitals operate. They are by no means comprehensive discussions. Analysis was, due to necessity of consistency, limited to certain sets of data. Each community has economic threats and opportunities that are not revealed by this brief discussion of the data. The primary purpose of this discussion is to help the reader visualize the structural characteristics of the economies and to understand the likelihood of dislocated workers finding other employment within the community. Supporting charts and data are in Appendix D.

Shawnee County - Kansas Neurological Institute and Topeka State Hospital

The "community", as defined in this study, for each of the Topeka facilities is Shawnee County. Shawnee County's economy is dominated by the functions surrounding state government. The state of Kansas is the county's largest single employer with approximately 39,000 employees working in Shawnee county. The largest industry sector is services. Many services are no doubt driven by the demands of state government, but Shawnee County also contains two regional medical centers and a V.A. hospital. Together, the three medical centers employ about 4,000 people. Additionally, Shawnee County is home to headquarters such as Western Resources, Inc. and Hill's Pet Nutrition, Inc. Other major employers include Southwestern Bell Telephone Company and Goodyear Tire and Rubber Co.

Shawnee County appears to be recovering from a mild two-year downturn which began in 1990 and bottomed out in 1991. This downturn coincided with the national recession. As of August, 1995 the unemployment rate in Shawnee County is 4.6 percent, compared to 5.0 in August of 1994, but higher than the state's unemployment rate of 4.2 percent.

Shawnee County's total population has increased steadily since 1980. In 1994 it was estimated to be 165,121. Eighty-four percent of the population are high school graduates compared to 81.3 percent for the entire state and 75.2 for the United States.

⁶ This section written by Carlene Hill, CEDBR, WSU. All data compiled and graphs produced by Janet Nickel, WSU. We are indebted to Kansas Department of Commerce for helping us identify major employers in the communities.

Larned State Hospital and Youth Center

The Larned State Hospital "community", as defined in this analysis, includes Pawnee County, home of the hospital, Barton and Edwards counties. There were an average of 19,988 people employed in this community in 1994. The vast majority of those people live in Barton County, which had 14,496 employed people in 1994. Pawnee trailed, with 3,686 employed people, followed by Edwards with 1,806 employed people. The activity and size of Barton County causes the "community" profile to be somewhat opaque. Each county is discussed individually below and followed by comments on the "community" total.

Larned State Hospital Barton County

Major employers in Barton County include the Fuller Brush Company, Central Kansas Medical Center and Westplains Energy. There is also considerable mining and manufacturing in Barton County, including manufacturing of farm implements and food processing. Barton County Community college is in Great Bend.

Services and Retail Trade are the two largest industry sectors in Barton County. There has been a structural shift in Barton County during the past decade as a result of declines in the oil and gas industry. Mining (which includes the oil and gas extracting employers) has moved from being the second largest employer industry to fourth, since 1983. There was a loss of almost 1,600 jobs in mining during that 10 year period. Barton County appears to be recovering from a broad based decline in employment that began in 1982. In addition to the oil and gas industry, farming suffered during this period. The decline bottomed out in 1989 and left the County with 4,051 fewer jobs (down 22%) than at the peak of 1981. As of August, 1995, the unemployment rate in Barton County was 4.7%, an improvement from 6.6% in August of 1994, and down considerably from a peak of 10.1 percent in 1986.

Barton County's population estimate for 1994 is 28,896, down from the 1990 Census of 29,382. The county has a lower percentage of high school graduates (78.0 percent) than the state (81.3 percent) but high than the national average (75.2 percent).

**Larned State Hospital
Pawnee County**

Larned State Hospital is the largest employer in Pawnee County. Other employers include local government and Doerr Metal Products. Central Kansas Medical Center-St. Joseph Campus in Pawnee County is one of the county's largest employers. County Business Patterns for 1992 show the County having a total of 212 private, non-farm establishments. Most have fewer than 100 employees. The government sector, which includes the Larned State Hospital, is the largest sector and services is second.

Pawnee County went through a period of declining employment, which began earlier than that of Barton County, most likely due to greater reliance on farming in the '70's. Although unemployment rates are low, employment remains somewhat volatile. (In more sparsely populated counties unemployment rates tend to remain low, even in times of employment declines, unless there is a major boom/bust cycle because people tend to either move, or drop out of the "work force" as defined by employment data.) Employment began to recover in 1992, but declined again in 1993 and 1994.

Pawnee County's population estimate for 1994 is 7,721, up from the 1990 Census of 7,555. The county has a higher percentage of high school graduates (82.1 percent) than the state (81.3 percent) and higher than the national average (75.2 percent).

**Larned State Hospital
Edwards County**

Cross Manufacturing Inc. (The Cylinder Division) in Lewis, is the largest single employer in Edwards County. The largest industry sector is farming, followed by Services and Government. Manufacturing has surpassed Retail Trade as an industry employer in Edwards County since 1983. In 1994, 1,806 employed people lived in Edwards County. Although employment in Edwards County has been somewhat volatile, it has generally trended upwards, regaining or surpassing its losses following a decline. Although the unemployment rate has been increasing since 1989, employment has begun to increase during 1993 and 1994. This happens when the civilian labor force increases faster than the number of employed people. As of August, 1995, the unemployment rate in Edwards County was 3.9 percent, compared to 4.5 percent in August of 1994.

Edwards County's population estimate for 1994 is 3,557 down from the 1990 Census of 3,787. The county has a lower percentage of high school graduates (76.3 percent) than the state (81.3 percent), but higher than the national average (75.2 percent).

The Larned State Hospital Community As A Whole

Because of the size of Barton County, relative to the other counties included in the "community", the community profile basically mirrors Barton County trends. The entire Larned State Hospital community population estimate for 1994 is 40,174, down from the 1990 Census of 40,724. When the three counties are aggregated together, the community has a lower percentage of high school graduates (78.6 percent) than the state (81.3 percent), but higher than the national average (75.2 percent).

Osawatomie State Hospital

The definition for the Osawatomie "community" includes Miami, home of the Osawatomie State Hospital, Anderson and Linn counties. In 1994, there were 18,834 employed people living in this three county "community". Sixty-four percent of them, or 12,044 lived in Miami County. As with the Larned State Hospital, we will discuss the profile of each county individually, then point out any relevant differences in the characteristics of the "community" as a whole.

Osawatomie State Hospital Miami County

As in Pawnee County, the Osawatomie State Hospital is the largest employer in Miami County and Government, which includes the state hospital, is the largest industry sector. Taylor Forge is the second largest employer, with its metal fabrication works. As in many Kansas counties, there has been a structural shift away from agriculture toward more retail activity in Miami County between 1983-1993. In 1994 there were 12,044 employed people living in Miami County. Employment has been growing steadily, with the exception of 1991, since 1985. The County appears to be in a long-term growth cycle, benefiting from the general population increases in the region. As of August, 1995, the unemployment rate stood at 2.8 percent, compared to 4.5 percent in August of 1994.

Miami County's population estimate for 1994 is 24,723 up from the 1990 Census of 23,466. The county has a lower percentage of high school graduates (78.5 percent) than the state (81.3 percent), but higher than the national average (75.2 percent).

**Osawatomie State Hospital
Anderson County**

Farming is the largest industry in Anderson County - Government is second. In 1994 there were 3,764 employed people living in Anderson County. Aside from farming, non-durable goods manufacturing (apparel), the Anderson County Hospital and local government are the largest employers in the County. Taylor Forge also has operations in Anderson County. Several small manufacturers provide a small, but versatile mix of businesses in the county.

Employment growth has been increasing during the past four years, after a decline in 1989 and 1990. That decline in 1989 and 1990 was most likely related to the national economy, with apparel being very dependent on national consumer trends.

Anderson County's population estimate for 1994 is 7,905 up from the 1990 Census of 7,803. The county has a lower percentage of high school graduates (70.2 percent) than the state (81.3 percent) or the nation (75.2 percent).

**Osawatomie State Hospital
Linn County**

As in Anderson County, farming is an important industry sector in Linn County. Linn County government is one of the largest employers. The employment by industry data for Linn County is somewhat misleading because of concentration in the Services and Transportation and Public Utilities data requires suppression of the data. Kansas City Power and Light employs 279 people in LaCynge and is the county's largest employer.

In 1994, there were 3,926 employed persons living in Linn County. Employment has been steadily declining and the unemployment rate increasing throughout the duration of the mid 70's through 1994. Unemployment rates have been much higher than state or national trends, ranging from 8.0 to 10.0 percent during the past decade. Employment turned up in 1994 and has been more stable since 1991, suggesting the decline may be halting. As of August, 1995, unemployment in Linn County was at 7.5 percent, compared to 9.6 in August of 1994, further suggesting a slight recovery may be approaching.

Linn County's population estimate for 1994 is 8,570 up from the 1990 Census of 8,254. The county has a lower percentage of high school graduates (73.9 percent) than the state (81.3 percent), or the nation (75.2 percent).

Osawatomie State Hospital Community

The community economic structure is somewhat dominated by Miami County although the strength of Miami's County's economy is tempered in the community data, due to a stronger farm economy and slower growth in the other two counties. In general, the community appears to still be on the upside of a long lasting growth curve most probably driven by general population increases in the region.

Together, the three counties in the Osawatomie State Hospital have a population estimate for 1994 of 41,198 up from the 1990 Census of 39,523. The county has a lower percentage of high school graduates (75.8 percent) than the state (81.3 percent), but slightly higher than the national average (75.2 percent).

Parsons State Hospital

The defined "community" for the Parsons State Hospital is Labette County. The largest industry sector in Labette County is Government, with the Parsons State Hospital among the top two employers in the county. Labette County Medical Center is among the county's largest employers. Labette has a relatively large and varied manufacturing base, including ammunitions, metal fabrication, plastics and non-durables. There is also a community college in Labette County.

The county has been experiencing a decline in employment since 1989. In 1994, 9,765 employed people lived in the county, down 24 percent, from a peak of 12,789 in 1988. This is primarily related to cutbacks in the United States defense budget, which have lowered demand for ammunitions and lead to employment reductions at Day and Zimmerman, Inc., the ammunitions plant. Unemployment rates are considerably higher than state and national averages. The decline may be leveling out. As of August, 1995, the unemployment rate was 5.5 percent, compared to 7.8 percent for the month of August, 1994 and 8.2 percent for the year of 1994.

Labette County's population estimate for 1994 is 23,148 down from the 1990 Census of 23,693. The county has a lower percentage of high school graduates (74.2 percent) than the state (81.3 percent), or the nation (75.2 percent).

Rainbow Mental Health Facility

The "community" defined for Rainbow Mental Health Facility is Wyandotte County. There has been a major structural shift in Wyandotte County in the past ten years, with manufacturing declining from first, to third place as the largest employer sector since 1983. The University of Kansas Medical Center, with which Rainbow Mental Health Facility is associated, is one of the county's largest employer. Other major employers include the school district, Santa Fe Railway, General Motors Corp. and Sprint Communications.

Wyandotte County appears to be well into a growth cycle, with solid employment growth each year since 1991's low point of 70,577. The low in 1991 halted seven years of decline, from a peak employment of 87,377 in 1984. At the end of that decline, Wyandotte County had 16,800 fewer employed residents than at the peak, a loss of 19 percent. By 1994, 2,583, or 15 percent of those losses have been recovered. Unemployment rates in Wyandotte County are improving, but remain well above state levels. As of August, 1995, the unemployment rate in Wyandotte County was 6.2, down from 9.0 in August of 1994. In August of 1995 the statewide unemployment rate was 4.2 percent.

Wyandotte County's population estimate for 1994 is 155,075 down from the 1990 Census of 162,026. The county has a lower percentage of high school graduates (69.9 percent) than the state (81.3 percent) or the nation (75.2 percent).

Winfield State Hospital and Training Center

The defined "community" for Winfield State Hospital is Cowley County and Elk County. Cowley County, where the hospital is located, is by far the larger County. The discussion focus on each county individually.

Winfield State Hospital and Training Center Cowley County

There are two major cities in Cowley County, Winfield, where the state hospital is among the two largest employers, and Arkansas City. Other major employers include Rubbermaid and the General Electric Aircraft Engine Maintenance Center. The Service sector is the largest employment sector, followed closely by Government. The Government sector includes the hospital. Manufacturing is relatively strong in Cowley County, providing a fairly varied economic structure. Arkansas City is home to Cowley County Community College.

Cowley County employment declined in 1994, after a period of fairly steady increases since 1987. Unemployment rates have been relatively low throughout that growth period. As of August 1995, the unemployment rate is 5.9 percent, down from 6.0 percent in August of 1994, but well above the Kansas rate of 4.2 percent (August, 1995).

Cowley County's population estimate for 1994 is 37,240 up from the 1990 Census of 36,915. The county has a lower percentage of high school graduates (76.9 percent) than the state (81.3 percent), but higher than the national average (75.2 percent).

**Winfield State Hospital and Training Center
Elk County**

Elk County had 1,300 employed residents in 1994. It is and has been for the history of available data, primarily an agricultural county. The single largest employer is the county government. Manufacturing and mining play a larger role than our charts of employment by industry suggest. Due to the heavy concentration of mining and manufacturing in one or two employers, the data is suppressed by the Bureau of Economic Analysis. The mining sector employment is primarily related to rock quarrying. Since 1985, employment of Elk County residents had been declining until 1994 when employment increased. It is unclear whether growth is on the horizon. With such a small base, employment growth is hampered by fundamental factors such as population and housing. Unemployment rates are not particularly meaningful in an area where the total civilian labor force declines as job opportunities decline.

Elk County's population estimate for 1994 is 3,332 up slightly from the 1990 Census of 3,327. The county has a lower percentage of high school graduates (67.3 percent) than the state (81.3 percent) or the nation (75.2 percent).

**Winfield State Hospital and Training Center
Community Total**

The aggregate data of the "community" total reveals little new information because of the much larger size of the Cowley County economy, relative to that of Elk County. The two counties combined have a population estimate for 1994 of 40,527 up from the 1990 Census of 40,242. The community has a lower percentage of high school graduates (76.0 percent) than the state (81.3 percent), but higher than the national average (75.2 percent).

V. Labor Force Dynamics⁷

The purpose of this section is to discuss the likelihood that people dislocated from employment at one of the hospitals would be able to find other employment within the same community. The fundamental assumption is that the larger the economic base of the community, the more likely people are to find other employment within that community. Additionally, the larger the base, the more likely it is that services such as job search assistance are available.

Table 11 shows the relative sizes of the employment bases for each of the counties where the hospitals exists. The bottom half of the table shows the relative size of the employment base of the "community" as defined by the hospital closure commission.

In addition to the size of the economy, the likelihood of people finding other employment within some reasonable time frame within their community will be affected by the speed with which any possible closure occurs. A closure which occurs swiftly can be expected to send stronger shocks and require somewhat longer periods for people to locate other employment.

Most of the research on displaced workers focuses on employees who, at the time of lay-offs were often unaware that they would be laid off. Most dislocated workers do not recognize that their chances of recall are slim. A first necessary, and often difficult and slow step for traditionally laid off workers, is the recognition of the need to engage in a job search.⁸ The employers of concern here will know and although this knowledge may have negative benefits, if turnover increases due to uncertainty, the very knowledge is a positive benefit to finding other employment.

The availability of job search services, re-training and income support can also play a role. For our purposes, it is assumed that any assistance available through the Kansas Department of Human Resources would be equally available to any of the communities. Again, however, larger communities might be assumed to have a wider variety of services available for assistance.

Current, reliable data on employment projections was not available. The Kansas Department of Human Resources is currently in the process of revising employment projections by Service Delivery Areas. The projections should be available by the time any closure proceedings were required. They will be helpful for those considering re-training for career changes.

In summary, the size of the community remains our best indicator of the re-employment prospects, with larger communities offering a broader range of options.

⁷ Authored by Carlene Hill, CEDBR, WSU.

⁸ Leigh, Duane E. "Assisting Displaced Workers: Do the States have a better idea?" (W.E. Upjohn Institute for Employment Research, 1989)

**Table 11. Hospitals Ranked by
Total Employed 1994**

Community Totals for Hospitals As Defined by the Hospital Closure Committee	Total Employed 1994
Kansas Neurological Institute, Agency 363	84,722
Topeka State Hospital, Agency 664	84,722
Rainbow Mental Health Facility, Agency 555	73,160
Larned State Hospital, Agency 410	19,988
Larned Youth Center, Agency 412	19,988
Osawatomie State Hospital, Agency 494	18,834
Winfield State Hospital, Agency 713	18,218
Parsons State Hospital, Agency 507	9,765
County Where Hospital is Located As Defined by the Hospital Closure Committee	Total Employed 1994
Kansas Neurological Institute, Agency 363	84,722
Topeka State Hospital, Agency 664	84,722
Rainbow Mental Health Facility, Agency 555	73,160
Winfield State Hospital, Agency 713	16,918
Osawatomie State Hospital, Agency 494	12,044
Parsons State Hospital, Agency 507	9,765
Larned State Hospital, Agency 410	3,686
Larned Youth Center, Agency 412	3,686

Source: KDHR, Civilian Labor Force data based on residence.
Compiled by CEDBR, WSU

Appendices

A. Definition of Hospital "Communities" by Hospital Closure Commission.

- Table A1 Employees By Agency and Place of Residence (July, 1995)
- Table A2 Percentage of County Residents Employed At the Hospital (July, 1995)
- Table A3 Employees By Agency and Place of Residence (August, 1995)
- Table A4 Percentage of County Residents Employed At the Hospital (August, 1995)
- Table A5 State Hospital's Share of Community Income

B. Technical Appendix To Impact Estimates

C. Sources and Uses of Data

D. Supporting Data for Community Profile Section

- Charts D1 Showing Employment History
- Charts D2 Showing Employment By Industry, 1983 and 1993

Supporting Data Tables

- Table D1 Civilian Labor Force Data, 1976-1994
- Table D2 Unemployment Rates, August 1995 and August 1994
- Table D3 Resident Population
- Table D4 Population Projections
- Table D5 Educational Attainment Persons 25 Years and Over
- Table D6 Occupation Employed Persons 16 Years and Over
- Table D7 Population by Age, 1990
- Table D8 Population by Race, 1990

E. Supplemental Tables

- Table E1 Summary of Economic Impact of Hospital Closure
- Table E2 Ranking of Economic Impact of Hospital Closure by Indicator
- Table E3 Overall Economic Impact of Hospital Closure

Appendix A¹

Definition of Hospital Communities by Hospital Closure Commission

The Hospital Closure Commission was asked to consider the economic impact of closure of a hospital on the community where the hospital is located. It was left to the commission to determine the definition of "community". Based on an analysis of residence of hospital employees and resident employment data, the Hospital Closure Commission defined the hospital "community" as follows: the county where the hospital is located and any other counties where 1) 50 or more hospital employees reside or 2) hospital employees represent 1 percent or more of the number of employed residents of a county.

The Hospital Closure Commission based its decision on employment data provided by the Department of Social and Rehabilitative Services as of July 17, 1995 showing the number of employees of each hospital by city of residence. Table A1 shows the number of hospital employees by county (July, 1995). Table A2 shows the number of hospital employees as a percentage of total employed county residents (July 1995). Total employed residents was based on Civilian Labor Force data from the 1990 Census of Population and Housing. At the time this decision was made we did not have available more current Civilian Labor Force data for all counties.

Based on the Hospital Closure Commission's criteria the following communities were defined for each hospital:

- ◆ Kansas Neurological Institute includes Shawnee County
- ◆ Larned State Hospital includes Barton, Edwards and Pawnee counties
- ◆ Osawatomie State Hospital includes Anderson, Linn and Miami counties
- ◆ Parsons State Hospital includes Labette County
- ◆ Rainbow Mental Health Facility includes Wyandotte County
- ◆ Topeka State Hospital includes Shawnee County and
- ◆ Winfield State Hospital includes Cowley and Elk counties.

At the time the Hospital Closure Commission defined communities for each hospital, employment data for the Larned Youth Center was not available. A second set of employment data, August 1995 levels, was analyzed which included employment for the Larned Youth Center. Based on the same criteria used by the Hospital Closure Commission no additional counties were added to the hospital community definitions. Based on the HCC criteria, Barton and Edwards counties would not be included in the community definition for the Larned Youth Center. However, based on the CEDBR's best judgment the same community definition was used for each Larned institution (the HCC did not have any input at the point). See tables A3 and A4.

The Department of Social and Rehabilitative Services also provided total compensation, payroll data, for fiscal year 1994/1995 for each hospital by place of residence. Total compensation includes both wage and salary income as well as other labor income such as FICA contributions, health insurance premiums, unemployment insurance contributions etc.

¹ This section written by Janet Nickel, CEDBR, WSU.

As a secondary check, the CEDBR analyzed the payroll data using a payroll criteria of 1) include the county where the hospital is located and 2) include any additional county(s) where hospital payroll accounts for 1 percent or more of total county income. The county income figures used were 1993 total personal income estimates produced by the U.S. Department of Commerce, Bureau of Economic Analysis. Using this income criteria no additional counties would be added to the definition of hospital communities. (Table A5.)

All three sets of data (July 1995 employment, August 1995 employment and 1994/95 payroll) show similar employee resident patterns.

**TABLE A1. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(JULY 1995 EMPLOYMENT LEVELS)**

KANSAS NEUROLOGICAL INSTITUTE, TOPEKA, AGENCY 363

COUNTY*	EMPLOYEES	% OF TOTAL
SHAWNEE	699	90.5%
OSAGE	23	3.0%
WABAUNSEE	13	1.7%
DOUGLAS	10	1.3%
JEFFERSON	10	1.3%
JACKSON	7	0.9%
JOHNSON	2	0.3%
POTTAWATOMIE	2	0.3%
NEMAHA	1	0.1%
MITCHELL	1	0.1%
ELLIS	1	0.1%
WYANDOTTE	1	0.1%
FRANKLIN	1	0.1%
LYON	1	0.1%
TOTAL EMPLOYEES	772	100.0%

LARNED STATE HOSPITAL, LARNED, AGENCY 410

COUNTY*	EMPLOYEES	% OF TOTAL
PAWNEE	668	80.4%
BARTON	100	12.0%
STAFFORD	18	2.2%
EDWARDS	17	2.0%
RUSH	11	1.3%
RICE	4	0.5%
ELLIS	2	0.2%
KIOWA	2	0.2%
PHILLIPS	2	0.2%
NESS	2	0.2%
RUSSELL	2	0.2%
MCPHERSON	1	0.1%
HODGEMAN	1	0.1%
FORD	1	0.1%
TOTAL EMPLOYEES	831	100.0%

**TABLE A1. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(JULY 1995 EMPLOYMENT LEVELS)**

OSAWATOMIE STATE HOSPITAL, OSAWATOMIE, AGENCY 494

COUNTY*	EMPLOYEES	% OF TOTAL
MIAMI	384	68.3%
LINN	48	8.5%
FRANKLIN	40	7.1%
ANDERSON	33	5.9%
JOHNSON	29	5.2%
WYANDOTTE	4	0.7%
DOUGLAS	4	0.7%
BOURBON	3	0.5%
CLARK	3	0.5%
LEAVENWORTH	3	0.5%
CRAWFORD	2	0.4%
ALLEN	2	0.4%
LABETTE	1	0.2%
BARBER	1	0.2%
SHAWNEE	1	0.2%
WOODSON	1	0.2%
OUT OF STATE	3	0.5%
TOTAL EMPLOYEES	562	100.0%

PARSONS STATE HOSPITAL & TRAINING CENTER, PARSONS, AGENCY 507

COUNTY*	EMPLOYEES	% OF TOTAL
LABETTE	450	84.1%
NEOSHO	40	7.5%
CRAWFORD	24	4.5%
MONTGOMERY	14	2.6%
CHEROKEE	5	0.9%
ALLEN	1	0.2%
OUT OF STATE	1	0.2%
TOTAL EMPLOYEES	535	100.0%

**TABLE A1. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(JULY 1995 EMPLOYMENT LEVELS)**

RAINBOW MENTAL HEALTH FACILITY, KANSAS CITY, AGENCY 555

COUNTY*	EMPLOYEES	% OF TOTAL
WYANDOTTE	54	38.6%
JOHNSON	41	29.3%
MIAMI	3	2.1%
DOUGLAS	1	0.7%
LEAVENWORTH	1	0.7%
SHAWNEE	1	0.7%
OUT OF STATE	39	27.9%
TOTAL EMPLOYEES	140	100.0%

TOPEKA STATE HOSPITAL, TOPEKA, AGENCY 664

COUNTY*	EMPLOYEES	% OF TOTAL
SHAWNEE	469	82.9%
DOUGLAS	26	4.6%
OSAGE	18	3.2%
WABAUNSEE	14	2.5%
JACKSON	12	2.1%
JEFFERSON	12	2.1%
POTTAWATOMIE	7	1.2%
LYON	2	0.4%
NEMAHA	1	0.2%
COFFEY	1	0.2%
RILEY	1	0.2%
GEARY	1	0.2%
ATCHISON	1	0.2%
OUT OF STATE	1	0.2%
TOTAL EMPLOYEES	566	100.0%

WINFIELD STATE HOSPITAL & TRAINING CENTER, AGENCY 713

COUNTY*	EMPLOYEES	% OF TOTAL
COWLEY	692	90.9%
SUMNER	30	3.9%
ELK	14	1.8%
SEDGWICK	11	1.4%
BUTLER	6	0.8%
CHAUTAUQUA	2	0.3%
MONTGOMERY	1	0.1%
OUT OF STATE	5	0.7%
TOTAL EMPLOYEES	761	100.0%

*Based on city of residence as reported by employees.

Source: Kansas Department of Social and Rehabilitative Services

Compiled by CEDBR, Wichita State University

**TABLE A2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

KANSAS NEUROLOGICAL INSTITUTE, TOPEKA, AGENCY 363

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
SHAWNEE	79,496	699	0.9%
OSAGE	6,671	23	0.3%
WABAUNSEE	3,071	13	0.4%
DOUGLAS	40,660	10	0.0%
JEFFERSON	7,436	10	0.1%
JACKSON	5,224	7	0.1%
WYANDOTTE	68,966	1	0.0%
POTTAWATOMIE	7,772	2	0.0%
NEMAHA	4,782	1	0.0%
MITCHELL	3,222	1	0.0%
FRANKLIN	9,975	1	0.0%
ELLIS	13,123	1	0.0%
LYON	16,413	1	0.0%
JOHNSON	193,006	2	0.0%
TOTAL EMPLOYEES	NA	772	NA

LARNED STATE HOSPITAL, LARNED, AGENCY 410

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
PAWNEE	3,385	668	19.7%
BARTON	13,786	100	0.7%
STAFFORD	2,232	18	0.8%
EDWARDS	1,708	17	1.0%
RUSH	1,726	11	0.6%
RICE	4,567	4	0.1%
ELLIS	13,123	2	0.0%
KIOWA	1,639	2	0.1%
NESS	1,854	2	0.1%
RUSSELL	3,408	2	0.1%
PHILLIPS	2,926	2	0.1%
FORD	12,929	1	0.0%
HODGEMAN	892	1	0.1%
MCPHERSON	13,356	1	0.0%
TOTAL EMPLOYEES	NA	831	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE A2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

OSAWATOMIE STATE HOSPITAL, OSAWATOMIE, AGENCY 494

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
MIAMI	10,943	384	3.5%
LINN	3,000	48	1.6%
FRANKLIN	9,975	40	0.4%
ANDERSON	3,405	33	1.0%
JOHNSON	193,006	29	0.0%
WYANDOTTE	68,966	4	0.0%
DOUGLAS	40,660	4	0.0%
BOURBON	6,082	3	0.0%
CLARK	1,183	3	0.3%
LEAVENWORTH	27,757	3	0.0%
CRAWFORD	14,768	2	0.0%
ALLEN	6,311	2	0.0%
BARBER	2,606	1	0.0%
LABETTE	10,293	1	0.0%
SHAWNEE	79,496	1	0.0%
WOODSON	1,546	1	0.1%
OUT OF STATE	NA	3	NA
TOTAL EMPLOYEES	NA	562	NA

PARSONS STATE HOSPITAL & TRAINING CENTER, PARSONS, AGENCY 507

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
LABETTE	10,293	450	4.4%
NEOSHO	7,426	40	0.5%
CRAWFORD	14,768	24	0.2%
MONTGOMERY	16,335	14	0.1%
CHEROKEE	8,612	5	0.1%
ALLEN	6,311	1	0.0%
OUT OF STATE	NA	1	NA
TOTAL EMPLOYEES	NA	535	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE A2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

RAINBOW MENTAL HEALTH FACILITY, KANSAS CITY, AGENCY 555

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
WYANDOTTE	68,966	54	0.1%
JOHNSON	193,006	41	0.0%
MIAMI	10,943	3	0.0%
DOUGLAS	40,660	1	0.0%
LEAVENWORTH	27,757	1	0.0%
SHAWNEE	79,496	1	0.0%
OUT OF STATE	NA	39	NA
TOTAL EMPLOYEES	NA	140	NA

TOPEKA STATE HOSPITAL, TOPEKA, AGENCY 664

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
SHAWNEE	79,496	469	0.6%
DOUGLAS	40,660	26	0.1%
OSAGE	6,671	18	0.3%
WABAUNSEE	3,071	14	0.5%
JACKSON	5,224	12	0.2%
JEFFERSON	7,436	12	0.2%
POTTAWATOMIE	7,772	7	0.1%
LYON	16,413	2	0.0%
NEMAHA	4,782	1	0.0%
COFFEY	3,833	1	0.0%
RILEY	35,438	1	0.0%
GEARY	14,517	1	0.0%
ATCHISON	7,173	1	0.0%
OUT OF STATE	NA	1	NA
TOTAL EMPLOYEES	NA	566	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE A2. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(JULY 1995 EMPLOYMENT LEVELS)**

WINFIELD STATE HOSPITAL & TRAINING CENTER, AGENCY 713

COUNTY	NUMBER OF* EMPLOYED RESIDENTS	COUNTY RESIDENTS** EMPLOYED AT THE HOSPITAL	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
COWLEY	16,202	692	4.3%
SUMNER	11,328	30	0.3%
SEDGWICK	198,261	11	0.0%
ELK	1,316	14	1.1%
BUTLER	23,693	6	0.0%
CHAUTAUQUA	1,596	2	0.1%
MONTGOMERY	16,335	1	0.0%
OUT OF STATE	NA	5	NA
TOTAL EMPLOYEES	NA	761	NA

*1990 Census of Population and Housing, Summary Tape File 420, Kansas

**Based on city of residence as reported by employees.

Compiled by CEDBR, Wichita State University

**TABLE A3. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(AUGUST 1995 EMPLOYMENT LEVELS)**

COUNTY	EMPLOYEES	% OF TOTAL
Kansas Neurological Institute, Topeka, Agency 363		
AGENCY TOTAL	760	100.0
Shawnee	688	90.5
Osage	24	3.2
Wabaunsee	12	1.6
Douglas	10	1.3
Jefferson	9	1.2
Jackson	7	0.9
Johnson	2	0.3
Pottawatomie	2	0.3
Missouri	1	0.1
Nemaha	1	0.1
Mitchell	1	0.1
Ellis	1	0.1
Lyon	1	0.1
Wyandotte	1	0.1
 Larned State Hospital, Larned, Agency 410		
AGENCY TOTAL	821	100.0
Pawnee	654	79.7
Barton	101	12.3
Stafford	19	2.3
Edwards	18	2.2
Rush	11	1.3
Rice	4	0.5
Ness	2	0.2
Kiowa	2	0.2
Russell	2	0.2
Ellis	2	0.2
Phillips	2	0.2
Ford	1	0.1
Hodgeman	1	0.1
McPherson	1	0.1
Montgomery	1	0.1
 Larned Youth Center, Larned, Agency 412		
AGENCY TOTAL	114	100.0
Pawnee	80	70.2
Barton	30	26.3
Ellis	2	1.8
Rush	1	0.9
Stafford	1	0.9

**TABLE A3. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(AUGUST 1995 EMPLOYMENT LEVELS)**

COUNTY	EMPLOYEES	% OF TOTAL
Osawatomi State Hospital, Osawatomi, Agency 494		
AGENCY TOTAL	554	100.0
Miami	375	67.7
Linn	48	8.7
Franklin	40	7.2
Johnson	32	5.8
Anderson	32	5.8
Wyandotte	5	0.9
Douglas	4	0.7
Missouri	4	0.7
Leavenworth	3	0.5
Bourbon	3	0.5
Shawnee	2	0.4
Crawford	2	0.4
Woodson	1	0.2
Labette	1	0.2
Sedgwick	1	0.2
Allen	1	0.2
Parsons State Hospital, Parsons, Agency 507		
AGENCY TOTAL	525	100.0
Labette	447	85.1
Neosho	32	6.1
Crawford	28	5.3
Montgomery	14	2.7
Cherokee	2	0.4
Allen	1	0.2
Missouri	1	0.2
Rainbow Mental Health Facility, Kansas City, Agency 555		
AGENCY TOTAL	143	100.0
Wyandotte	87	60.8
Johnson	45	31.5
Miami	3	2.1
Leavenworth	2	1.4
Missouri	2	1.4
Shawnee	2	1.4
Crawford	1	0.7
Douglas	1	0.7

**TABLE A3. EMPLOYEES BY AGENCY AND PLACE OF RESIDENCE
(AUGUST 1995 EMPLOYMENT LEVELS)**

COUNTY	EMPLOYEES	% OF TOTAL
Topeka State Hospital, Topeka, Agency 664		
AGENCY TOTAL	548	100.0
Shawnee	456	83.2
Douglas	24	4.4
Osage	17	3.1
Wabaunsee	14	2.6
Jackson	13	2.4
Jefferson	11	2.0
Potawatomic	7	1.3
Lyon	2	0.4
Nemaha	1	0.2
Missouri	1	0.2
Coffey	1	0.2
Atchinson	1	0.2
 Winfield State Hospital, Winfield, Agency 713		
AGENCY TOTAL	752	100.0
Cowley	691	91.9
Sumner	22	2.9
Elk	14	1.9
Sedgwick	11	1.5
Butler	6	0.8
Oklahoma	5	0.7
Chautauqua	2	0.3
Montgomery	1	0.1

Source: Kansas Department of Social and Rehabilitative Services
Compiled by CEDBR, Wichita State University

**TABLE A4. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(AUGUST 1995 EMPLOYMENT LEVELS)**

County	NUMBER OF EMPLOYED RESIDENTS*	COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL**	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
Kansas Neurological Institute, Topeka, Agency 363			
AGENCY TOTAL	NA	760	NA
Shawnee	79,496	688	0.9%
Wabaunsee	3,071	12	0.4%
Osage	6,671	24	0.4%
Jackson	5,224	7	0.1%
Jefferson	7,436	9	0.1%
Mitchell	3,222	1	0.0%
Pottawatomie	7,772	2	0.0%
Douglas	40,660	10	0.0%
Nemaha	4,782	1	0.0%
Ellis	13,123	1	0.0%
Lyon	16,413	1	0.0%
Wyandotte	68,966	1	0.0%
Johnson	193,006	2	0.0%
Missouri	NA	1	NA
Larned State Hospital, Larned, Agency 410			
AGENCY TOTAL	NA	821	NA
Pawnee	3,385	654	19.3%
Edwards	1,708	18	1.1%
Stafford	2,232	19	0.9%
Barton	13,786	101	0.7%
Rush	1,726	11	0.6%
Kiowa	1,639	2	0.1%
Hodgeman	892	1	0.1%
Ness	1,854	2	0.1%
Rice	4,567	4	0.1%
Phillips	2,926	2	0.1%
Russell	3,408	2	0.1%
Ellis	13,123	2	0.0%
Ford	12,929	1	0.0%
McPherson	13,356	1	0.0%
Montgomery	16,335	1	0.0%
Larned Youth Center, Larned, Agency 412			
AGENCY TOTAL	NA	114	NA
Pawnee	3,385	80	2.4%
Barton	13,786	30	0.2%
Rush	1,726	1	0.1%
Stafford	2,232	1	0.0%
Ellis	13,123	2	0.0%

**TABLE A4. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(AUGUST 1995 EMPLOYMENT LEVELS)**

County	NUMBER OF EMPLOYED RESIDENTS*	COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL**	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
Osawatomi State Hospital, Osawatomi, Agency 494			
AGENCY TOTAL	NA	554	NA
Miami	10,943	375	3.4%
Linn	3,000	48	1.6%
Anderson	3,405	32	0.9%
Franklin	9,975	40	0.4%
Woodson	1,546	1	0.1%
Bourbon	6,082	3	0.0%
Johnson	193,006	32	0.0%
Allen	6,311	1	0.0%
Crawford	14,768	2	0.0%
Leavenworth	27,757	3	0.0%
Douglas	40,660	4	0.0%
Labette	10,293	1	0.0%
Wyandotte	68,966	5	0.0%
Shawnee	79,496	2	0.0%
Sedgwick	198,261	1	0.0%
Missouri	NA	4	NA
Parsons State Hospital, Parsons, Agency 507			
AGENCY TOTAL	NA	525	NA
Labette	10,293	447	4.3%
Neosho	7,426	32	0.4%
Crawford	14,768	28	0.2%
Montgomery	16,335	14	0.1%
Cherokee	8,612	2	0.0%
Allen	6,311	1	0.0%
Missouri	NA	1	NA
Rainbow Mental Health Facility, Kansas City, Agency 555			
AGENCY TOTAL	NA	143	NA
Wyandotte	68,966	87	0.1%
Miami	10,943	3	0.0%
Johnson	193,006	45	0.0%
Leavenworth	27,757	2	0.0%
Crawford	14,768	1	0.0%
Shawnee	79,496	2	0.0%
Douglas	40,660	1	0.0%
Missouri	NA	2	NA

**TABLE A4. PERCENT OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
(AUGUST 1995 EMPLOYMENT LEVELS)**

County	NUMBER OF EMPLOYED RESIDENTS*	COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL**	PERCENTAGE OF COUNTY RESIDENTS EMPLOYED AT THE HOSPITAL
Topeka State Hospital, Topeka, Agency 664			
AGENCY TOTAL	NA	548	NA
Shawnee	79,496	456	0.6%
Wabaunsee	3,071	14	0.5%
Osage	6,671	17	0.3%
Jackson	5,224	13	0.2%
Jefferson	7,436	11	0.1%
Potawatomie	7,772	7	0.1%
Douglas	40,660	24	0.1%
Coffey	3,833	1	0.0%
Nemaha	4,782	1	0.0%
Atchinson	7,173	1	0.0%
Lyon	16,413	2	0.0%
Missouri	NA	1	NA
Winfield State Hospital, Winfield, Agency 713			
AGENCY TOTAL	NA	752	NA
Cowley	16,202	691	4.3%
Elk	1,316	14	1.1%
Sumner	11,328	22	0.2%
Chautauqua	1,596	2	0.1%
Butler	23,693	6	0.0%
Montgomery	16,335	1	0.0%
Sedgwick	198,261	11	0.0%
Oklahoma	NA	5	NA

**Table A5. State Hospital's Share of
Community Income
(Payroll as a Percentage of Resident Income)**

	Total Personal Income*	Total Payroll Dollars**	Payroll As A Percentage of Total Income
Kansas Neurological Institute, Topeka, Agency 363			
Community Total***	3,363,067,000	18,529,806	0.6%
Shawnee	3,363,067,000	18,529,806	0.6%
Larned State Hospital, Larned, Agency 410			
Community Total	776,182,000	24,017,824	3.1%
Barton	527,955,000	2,962,652	0.6%
Edwards	87,765,000	514,998	0.6%
Pawnee	160,462,000	20,540,174	12.8%
Larned Youth Center, Larned, Agency 412			
Community Total	776,182,000	2,796,166	0.4%
Barton	527,955,000	741,282	0.1%
Edwards	87,765,000	0	0.0%
Pawnee	160,462,000	2,054,884	1.3%
Both Larned Agencies			
Community Total	776,182,000	26,813,990	3.5%
Barton	527,955,000	3,703,934	0.7%
Edwards	87,765,000	514,998	0.6%
Pawnee	160,462,000	22,595,058	14.1%
Osawatomie State Hospital, Osawatomie, Agency 494			
Community Total	652,425,000	13,747,523	2.1%
Anderson	117,539,000	1,138,378	1.0%
Linn	123,526,000	1,371,388	1.1%
Miami	411,360,000	11,237,757	2.7%
Parsons State Hospital, Parson, Agency 507			
Community Total	362,677,000	12,980,048	3.6%
Labette	362,677,000	12,980,048	3.6%
Rainbow Mental Health Facility, Kansas City, Agency 555			
Community Total	2,426,652,000	1,956,927	0.1%
Wyandotte	2,426,652,000	1,956,927	0.1%
Topeka State Hospital, Topeka, Agency 664			
Community Total	3,363,067,000	14,708,814	0.4%
Shawnee	3,363,067,000	14,708,814	0.4%
Both Topeka Agencies			
Community Total	3,363,067,000	33,238,620	1.0%
Shawnee	3,363,067,000	33,238,620	1.0%
Winfield State Hospital, Winfield, Agency 713			
Community Total	662,231,000	19,840,915	3.0%
Cowley	611,024,000	19,553,163	3.2%
Elk	51,207,000	287,752	0.6%

*Source: U.S. Dept. of Commerce, Bureau of Economic Analysis. Personal Income based on place of residence.

**Source: Kansas Dept. of SRS. Payroll dollars based on place of residence.

***Community total as defined by the Hospital Closure Committee.

Compiled by CEDBR, Wichita State University

Appendix B¹

Technical Appendix To Impact Estimates

The analysis of the indirect effects of hospital closure on local communities was done by a 48 sector, constant across row input output model. The sector aggregation is the same as the IPPBR's state-wide model. The basic model is given by the equation

$$\mathbf{X} = \mathbf{RX} + \rho\gamma(\lambda \mathbf{X} + y) + \mathbf{E}.$$

Where \mathbf{X} is a 48x1 vector of county community demand, \mathbf{R} is a 48x48 matrix of the country level industrial regional demand coefficients, ρ is a scalar adjustment for residency, γ is a 48x1 vector of household county demand coefficients, λ is a 48x1 vector of labor compensation per dollar of domestic demand, y is scalar exogenous income and \mathbf{E} is a 48x1 vector of exogenous demand.

The country level industrial demand coefficient matrix \mathbf{R} is based on a Kansas state-wide industrial demand coefficient matrix constructed for the IPPBR Kansas model. This matrix was brought down to the county level using the location quotient method. The import coefficient required for this method was derived from the desuppressed BEA county business patterns data for 1991. This was the latest year of desuppressed data available. Some of the import coefficients were then adjusted by hand: housing imports were set to 0, postal services set to 2/3, railroads and agricultural imports were set to 1.

The term in parentheses in the equation above is essentially county income. This is found by taking exogenously generated income y and adding the income created by county level production \mathbf{X} . The 48x1 vector λ takes local industrial production and turns it into income. This vector is constructed by taking the labor coefficients from the 1987 statewide model and bringing it down to the county level by using the ratio of county compensation per job to state compensation per job. This was then adjusted to include proprietor's income by multiplying the result by the ratio of wages and proprietor's income to wage income. All of the required information was found in BEA county data tables CA5 and CA25 for 1993.

County level endogenous demand is given by multiplying county level income by county consumption coefficients. These were derived from the household consumption coefficients for the United States input-output model pairwise multiplied by the import coefficients. The resulting vector of endogenous demand for local production was multiplied by ρ , the percentage of people who both work in and live in the same county. This percentage was calculated from the 1990 census county data on commuting. An alternative model was also calculated by assuming that ρ is one.

¹ Written by Neal Becker, IPPBR, University of Kansas

The impact model solution is given by

$$\Delta X = (I - R - \rho\gamma\lambda')^{-1}(\lambda\Delta y + \Delta E).$$

In this case Δy is the total compensation to hospital employees who live in the county and ΔE is a vector by model sector of hospital purchases made within the county. Total changes in county compensation are given by

$$\rho\gamma' \Delta X + \Delta y$$

and total changes in employment is given by

$$\rho \mathbf{j}' \text{diag}(\lambda) \Delta X$$

where \mathbf{j} is a 48x1 vector of jobs to output ratios created from BEA county level data tables CA5 and CA25 for 1993.

The changes in sales tax and property tax were calculated based on changes in county level income and output. The sales tax change is given by the ratio of county sales tax collection to county income times the total change in county income.²

The change in property taxes was divided into two parts. Property tax changes from residential property value changes were based on changes in county income. They are estimated by changes in income times the statewide residential property tax per dollar of income, adjusted by the ratio of the county's tax per dollar of assessed value to the state's tax per dollar of assessed value. This is given in the equation below:

$$\left[\frac{(T_{res}/V_{res})}{(T_{res}^K/V_{res}^K)} \right] [\Delta y/y^K] T_{res}^K$$

where T_{res} is county tax revenues from residences in 1994, V_{res} is county assessed valuation from residences in 1994, T_{res}^K is Kansas total tax revenues from residences in 1994, V_{res}^K is Kansas assessed valuation from residences in 1994 and y^K is Kansas income for 1994.³

² Source: Bureau of Economic Analysis, U.S. Department of Commerce, Quarterly Estimates of Kansas Total Personal Income, 1994.

³ Source: "Statistical Report of Property Assessment and Taxation", Kansas Department of Revenue, Division of Property Valuation, 1995.

Estimated property tax changes from other sources excluding utilities were based on estimated changes in the capital stock for each county. The changes in the capital stock were produced by taking the capital to output ratios for Kansas from the IPPBR statewide model and multiplying them by ΔX . This sum is then multiplied by the statewide tax rate on capital, then adjusted for county differences by the ratio of county tax per assessed nonresidential property to state tax per assessed nonresidential property. This relationship is given in the equation below:

$$[(T_{ind}/V_{ind})/(T_{ind}^K/V_{ind}^K)][\Delta X/v'X^K]T_{ind}^K,$$

where T_{ind} is county tax revenues from non-residential property taxes excluding utilities in 1994, V_{ind} is county appraised valuation from non-residential property taxes excluding utilities in 1994, T_{ind}^K is Kansas total tax revenues from non-residential property taxes excluding utilities in 1994, V_{ind}^K is Kansas appraised valuation from non-residential property taxes excluding utilities in 1994, v is a set of capital to output ratios from the IPPBR Kansas model X^K is a vector of Kansas output for 1994, estimated as $X_{1987}^K(Y_{1994}/Y_{1987})$, and Y_t is total Kansas product in year t .

Appendix C¹

Sources and Uses of Data For Section III

There are several sets of data used in this analysis. The use of different sets of data can be somewhat confusing. All of the numbers are estimates so numbers will not be the same for the same year from different sources. Additionally, definitions vary. In most cases we are comparing one set of data from one source to data from the hospital. Our primary concerns in deciding which data to use was (1) availability, and (2) that the definition of the base data closely match the definitions used in the hospital data.

There are three sources of employment data used, each for a specific purpose. First, we used the 1990 Census of Civilian Employment by residence to determine the definition of "community". This was used because it is the benchmark data upon which all other employment data is based, and because it was available in time to meet our needs.

Secondly, Civilian Labor force data over time is shown for each county, 1976-1994. This data was compiled for us by the Kansas Department of Human Resources. It is shown primarily to orient readers to the historical trends in unemployment rates - the indicator with which most people are familiar. Total civilian labor force and employment trends are shown because sometimes the two reveal more than is apparent from the unemployment rate alone.

It is possible that if we had used KDHR 1994 or 1995 civilian labor force data as the base to determine the definition of "community" (See Appendix X- Definition of Hospital Communities by Hospital Closure Committee) we would have a different definition of community. However, the definition of community had to be made before other analysis could begin and it was considered using three different methods, each of which confirmed that the initial definition based on the data available was the broadest definition of the "community".

Both of the above measures of employment count numbers of people and are based on household surveys. Additionally, they are based on the place people live, regardless of where they work.

In contrast, the third set of employment data counts number of jobs based on the location of the job. Full and part-time employment is provided by the U.S. Department of Commerce, Bureau of Economic Analysis (BEA). This data, shown for 1983 and 1993 (the latest year for which data is available) shows employment by industry. It is important because it helps us understand how many jobs are actually located in a county, which has implication for the infrastructure needs, public revenue sources and the mix of jobs in various industries. It gives us insights into the diversity of the economy, which has implications for its ability to absorb shocks. Employment data from the BEA is comparable to income data, also available through 1983 from BEA.

In summary, the various sources of data each have a particular strength or weakness. When deciding which data set to use, we chose the set most consistent across communities and most consistent with the sources and definitions of comparative data and available at the time needed.

¹ Written by Carlene Hill, CEDBR, WSU. All data compiled by Janet Nickel, CEDBR, WSU.

Appendix D

Supporting Data for Community Profile Section IV

Charts D1 Showing Employment History

Charts D2 Showing Employment By Industry, 1983 and 1993

Supporting Data Tables

Table D1 Civilian Labor Force Data, 1976-1994

Table D2 Unemployment Rates, August 1995 and August 1994

Table D3 Resident Population

Table D4 Population Projections

Table D5 Educational Attainment Persons 25 Years and Over

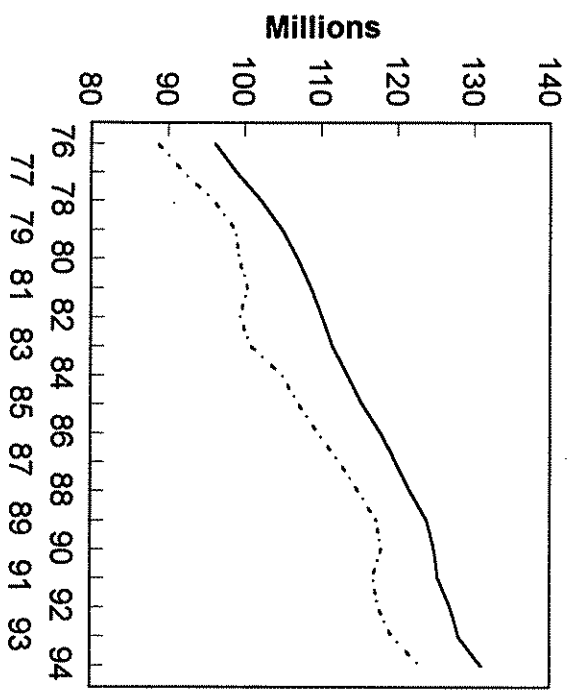
Table D6 Occupation Employed Persons 16 Years and Over

Table D7 Population by Age, 1990

Table D8 Population by Race, 1990

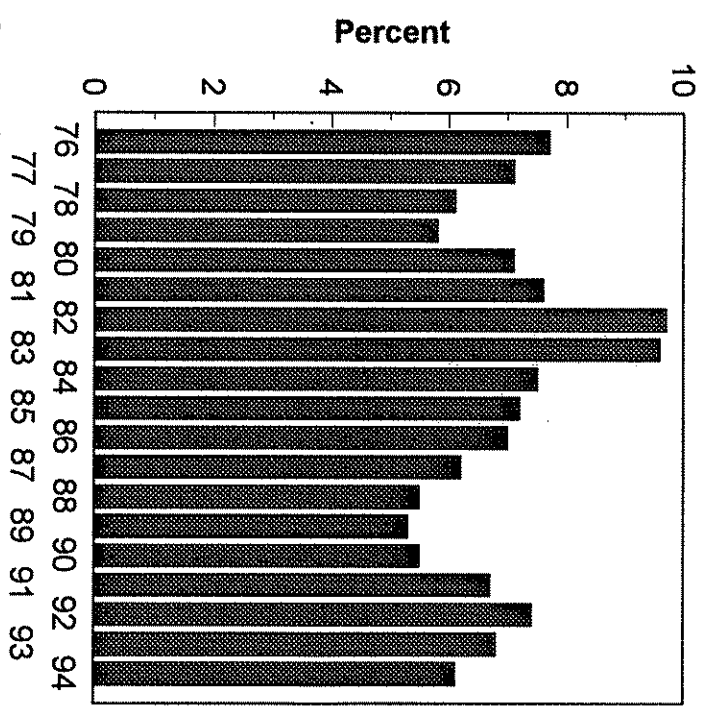
Chart D1. Civilian Labor Force Trends United States

Civilian Labor Force
United States



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

Unemployment Rate
United States

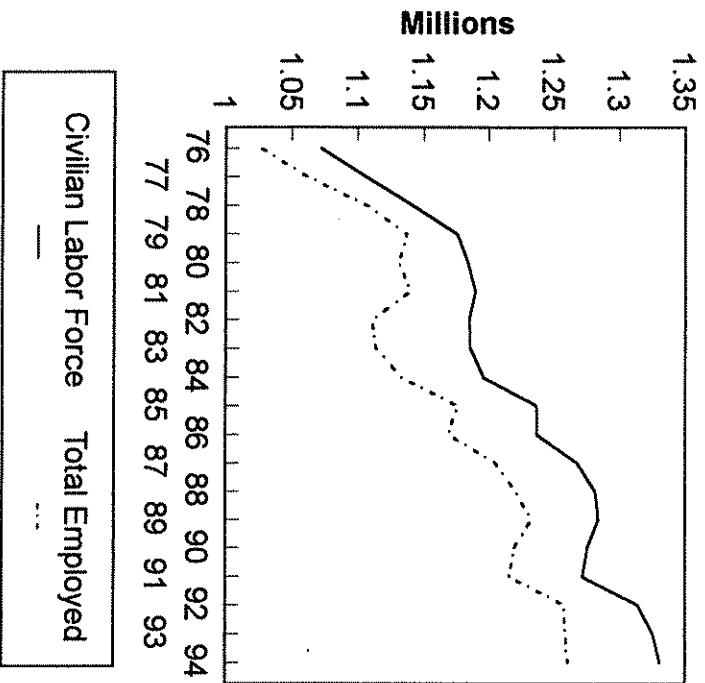


Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

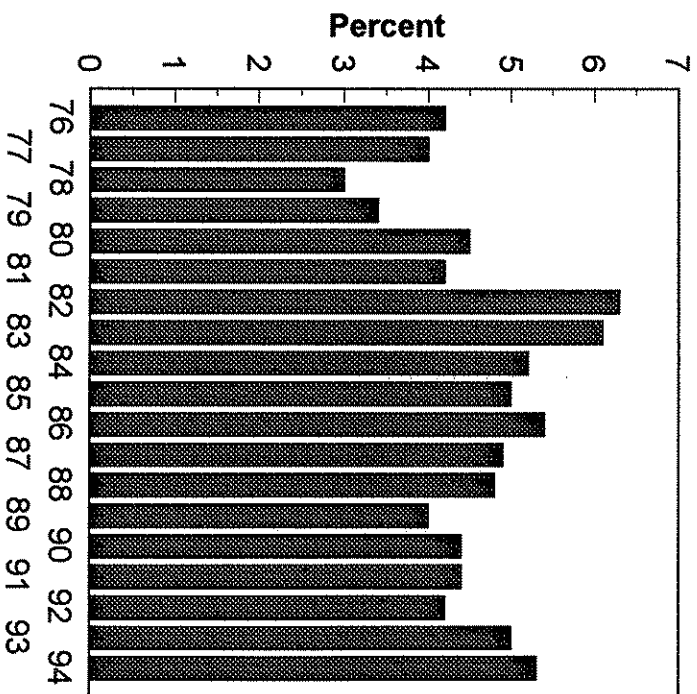
Chart D1. Civilian Labor Force Trends Kansas

Civilian Labor Force
Kansas



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

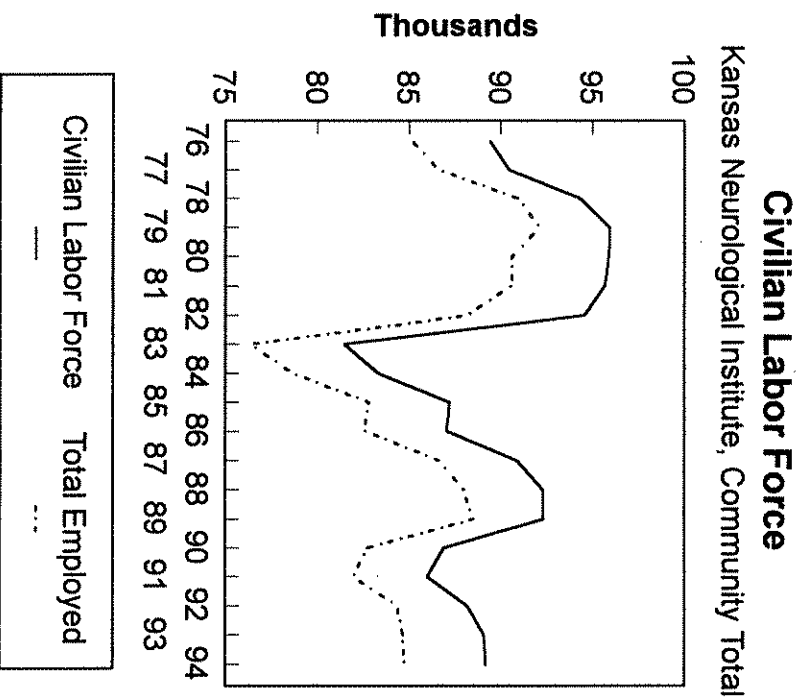
Unemployment Rate
Kansas



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

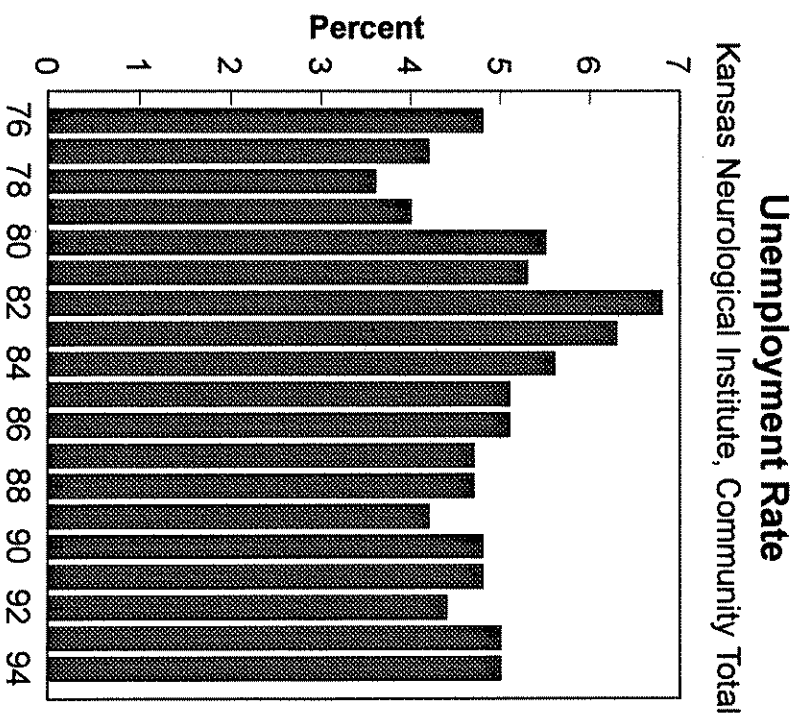
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Kansas Neurological Institute Community Total



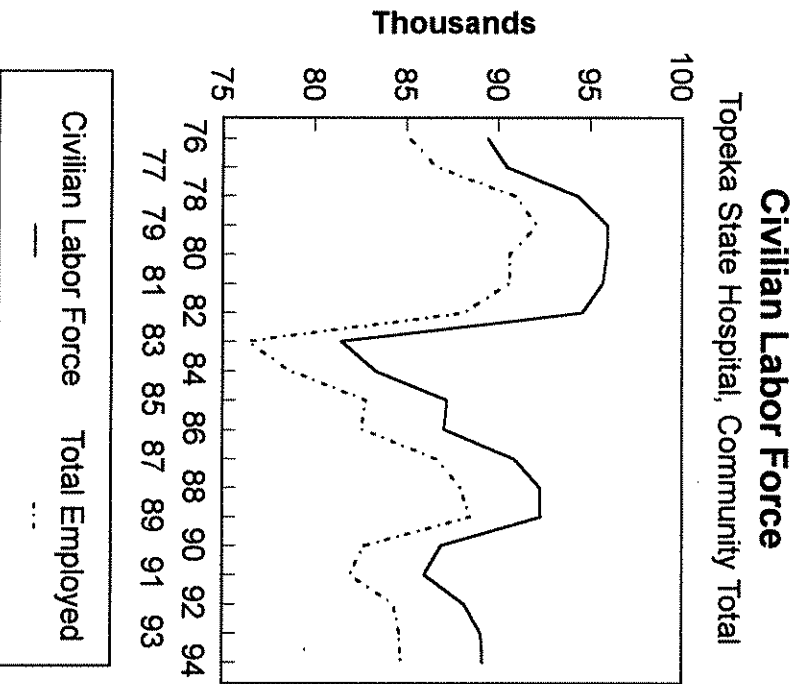
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



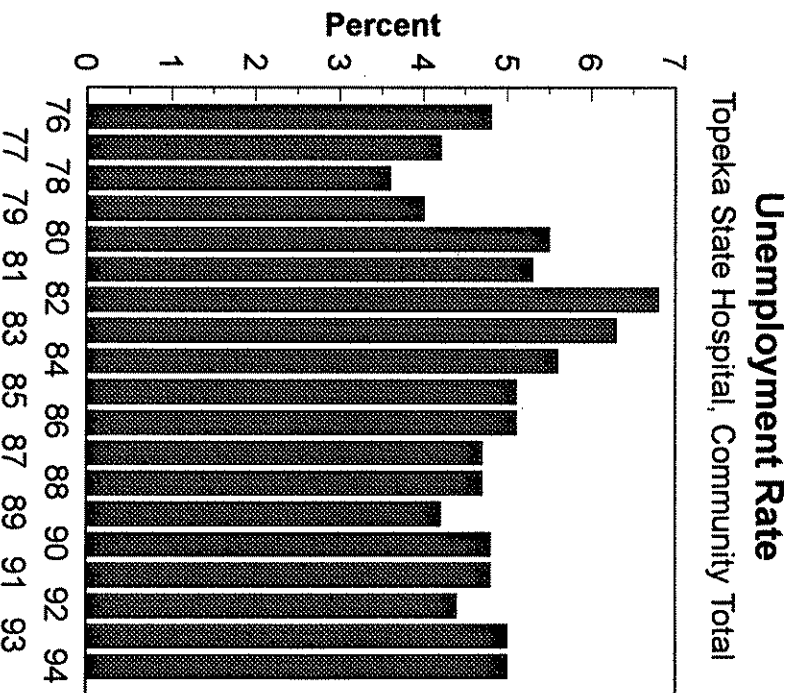
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

Chart D1. Civilian Labor Force Trends Topoka State Hospital Community Total



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

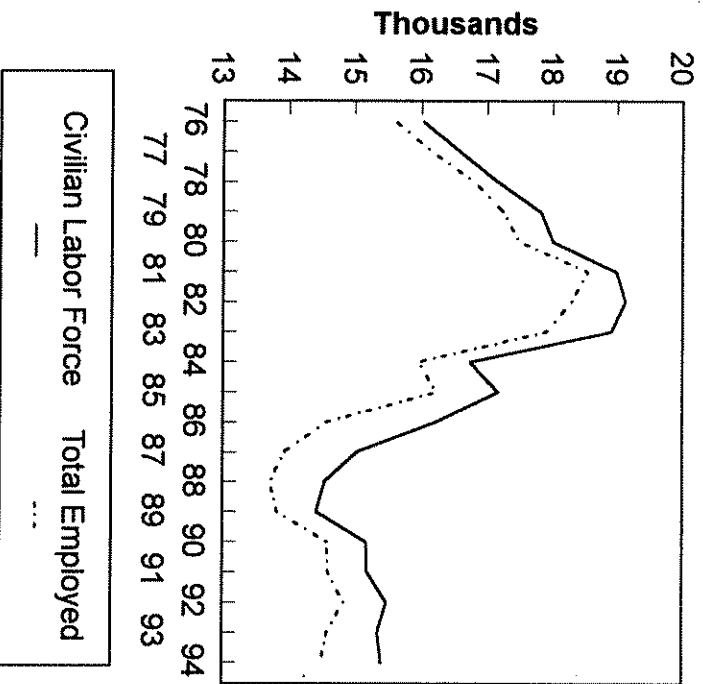
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

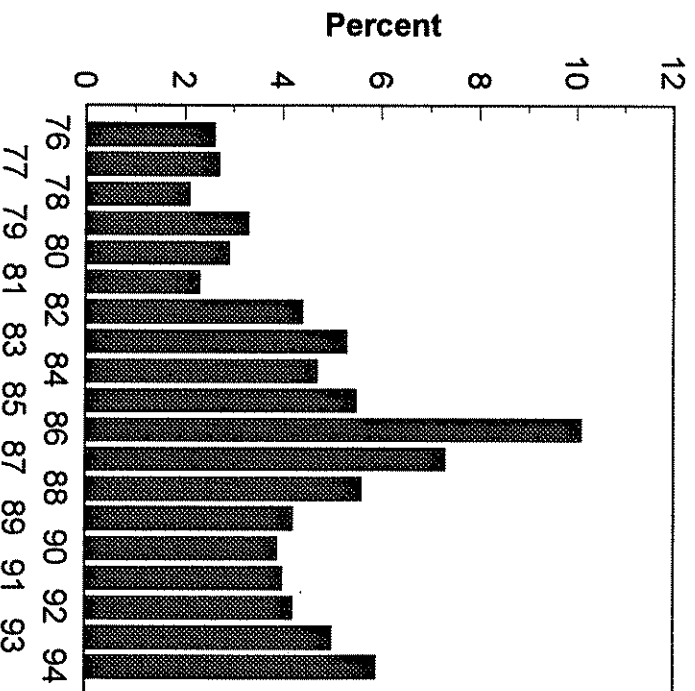
Chart D1. Civilian Labor Force Trends Barton County (Larned State Hospital)

Civilian Labor Force
Barton County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

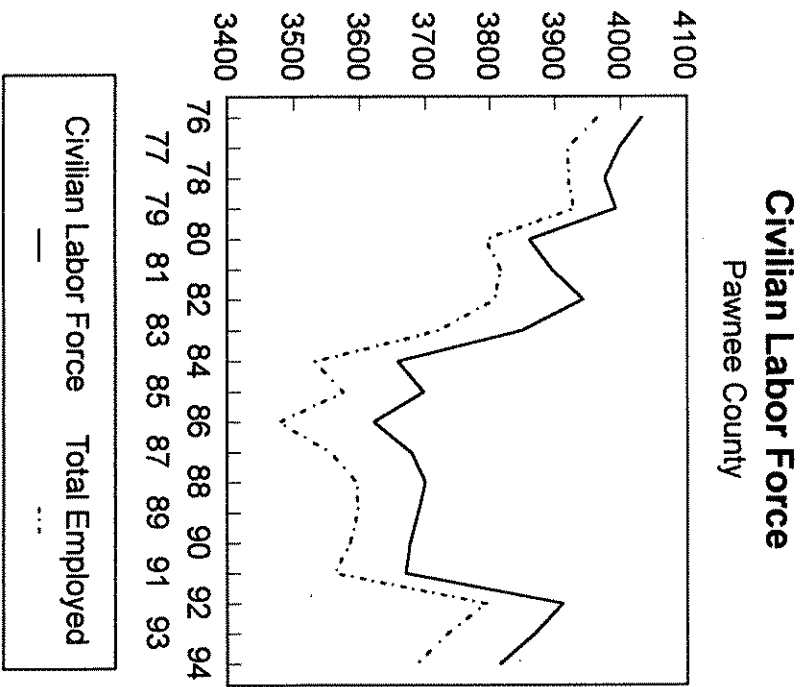
Unemployment Rate
Barton County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

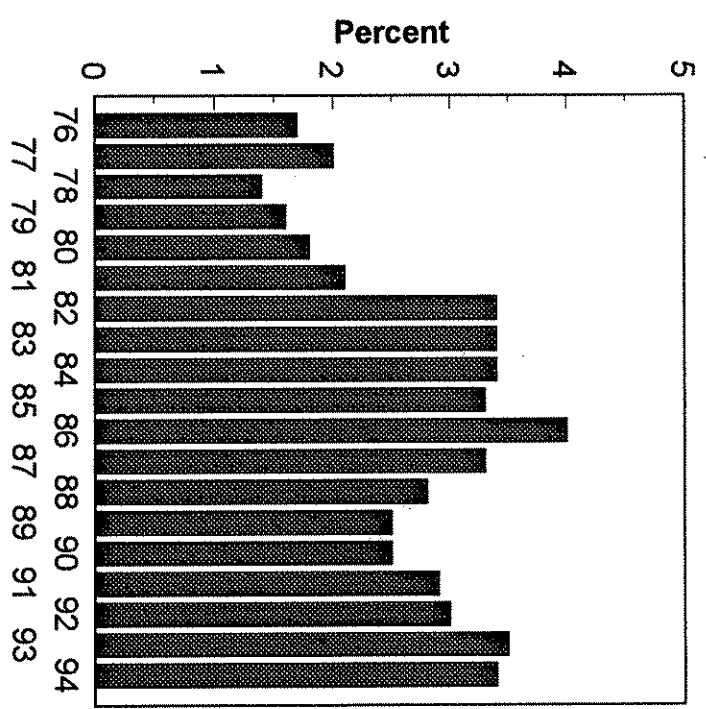
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Pawnee County (Larned State Hospital)



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

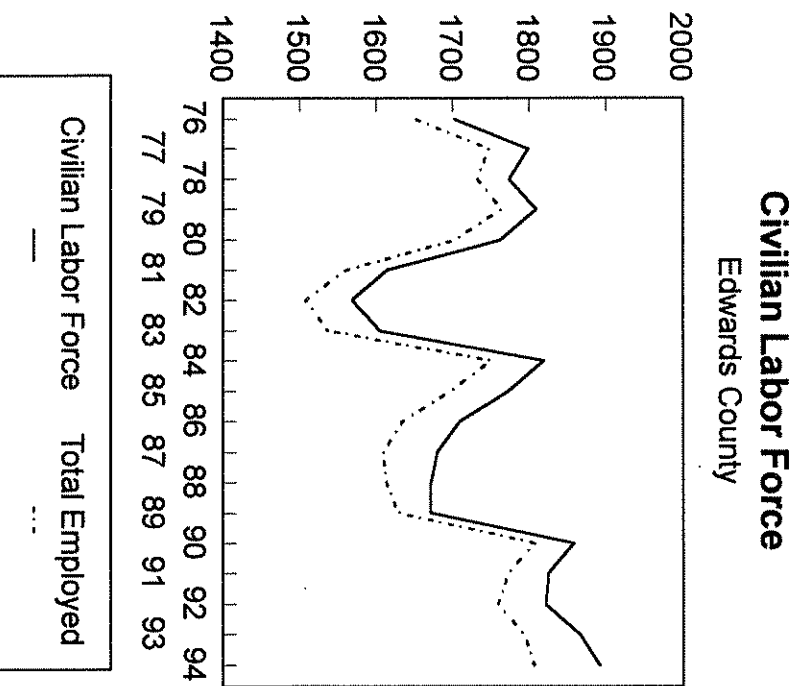
Unemployment Rate
Pawnee County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Edwards County (Larned State Hospital)



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

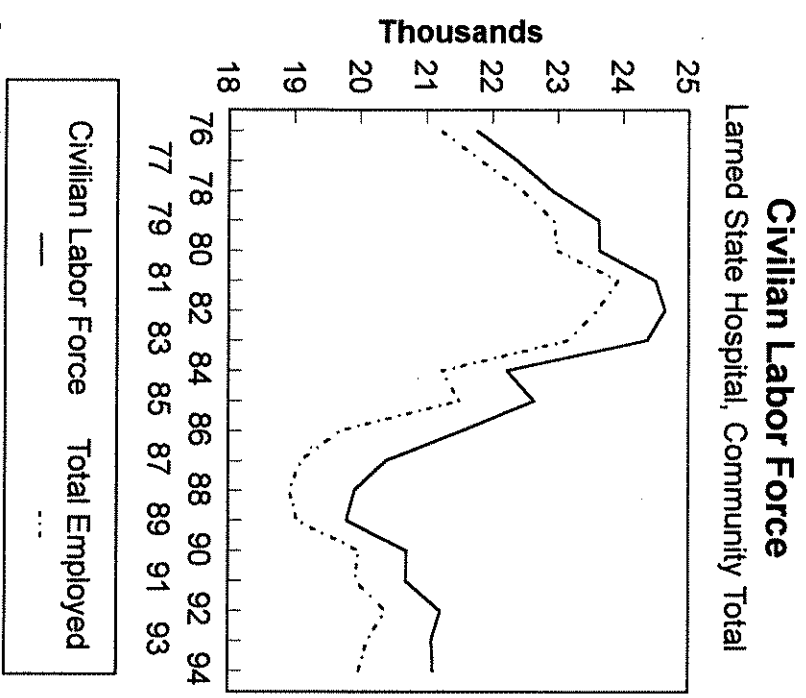


Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

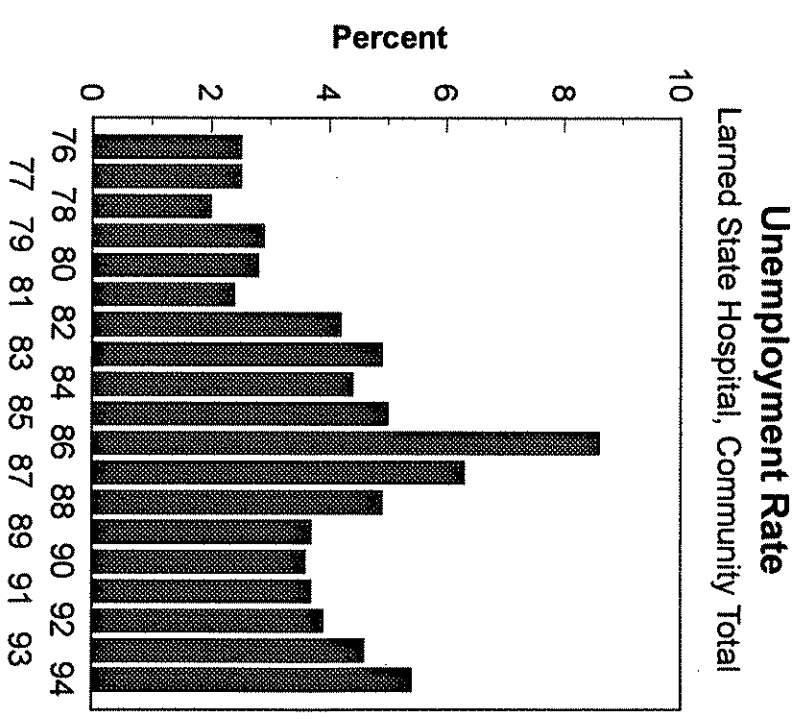
Chart D1. Civilian Labor Force Trends

Larned State Hospital Community Total



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

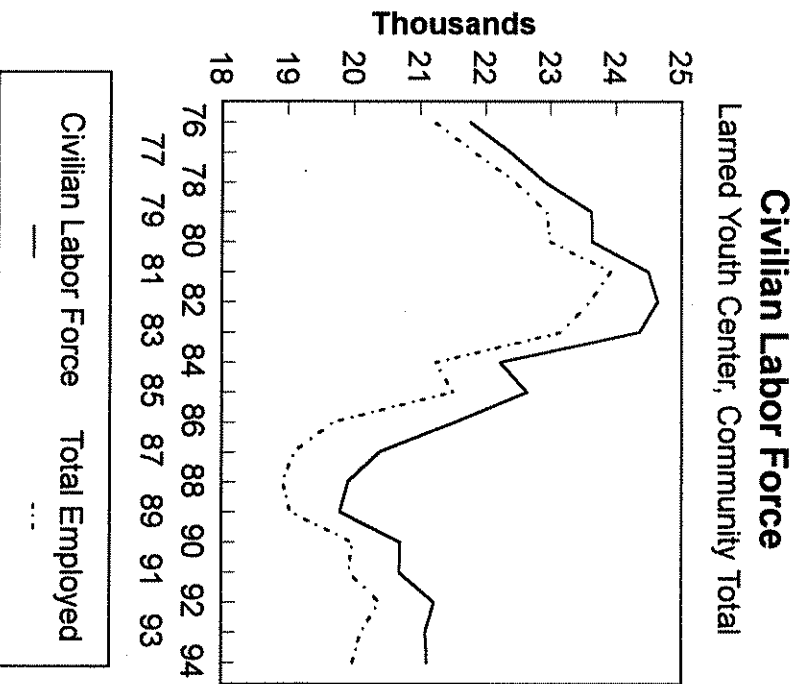


Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

Chart D1. Civilian Labor Force Trends

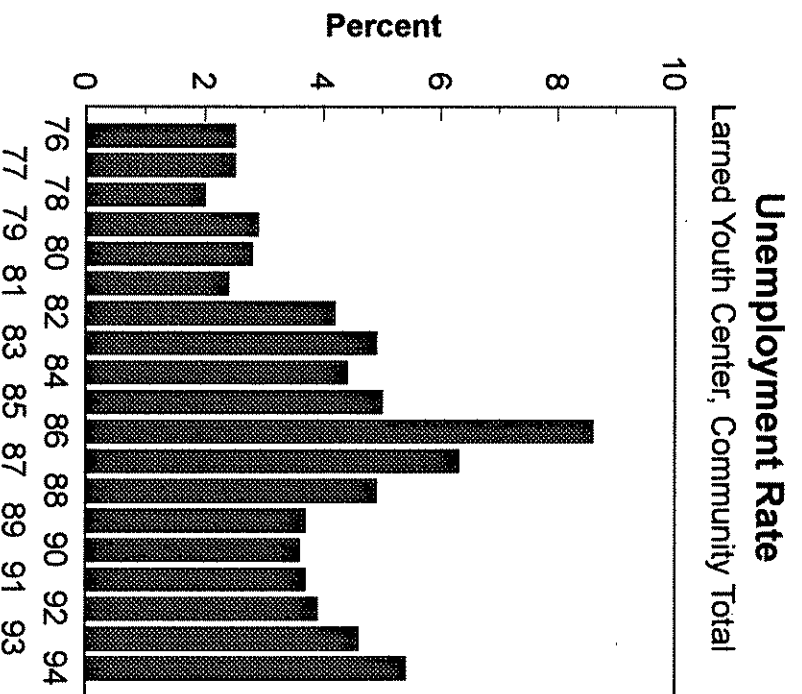
Larned Youth Center

Community Total



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

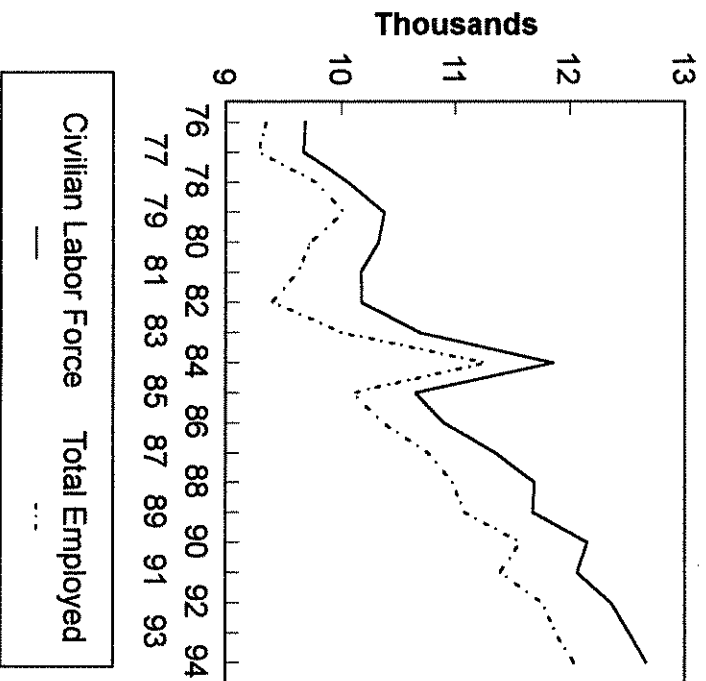
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

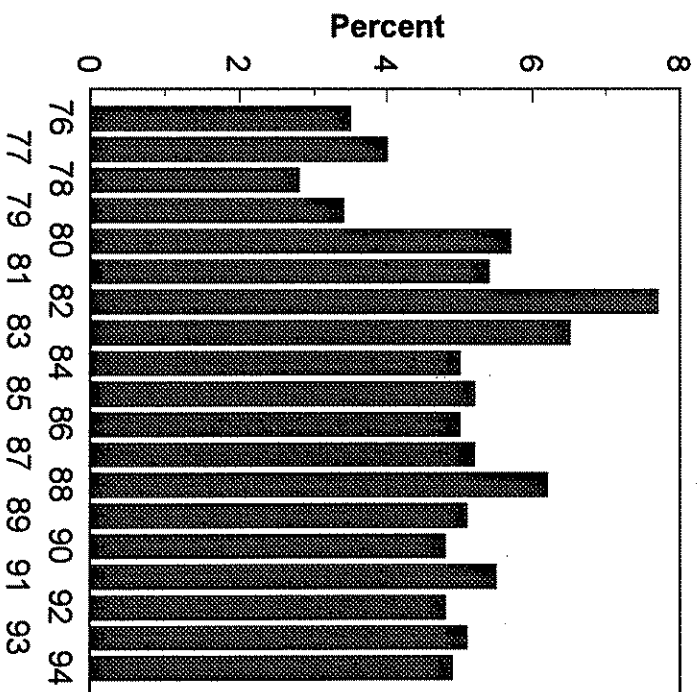
Chart D1. Civilian Labor Force Trends Miami County (Osawatomie State Hospital)

Civilian Labor Force
Miami County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

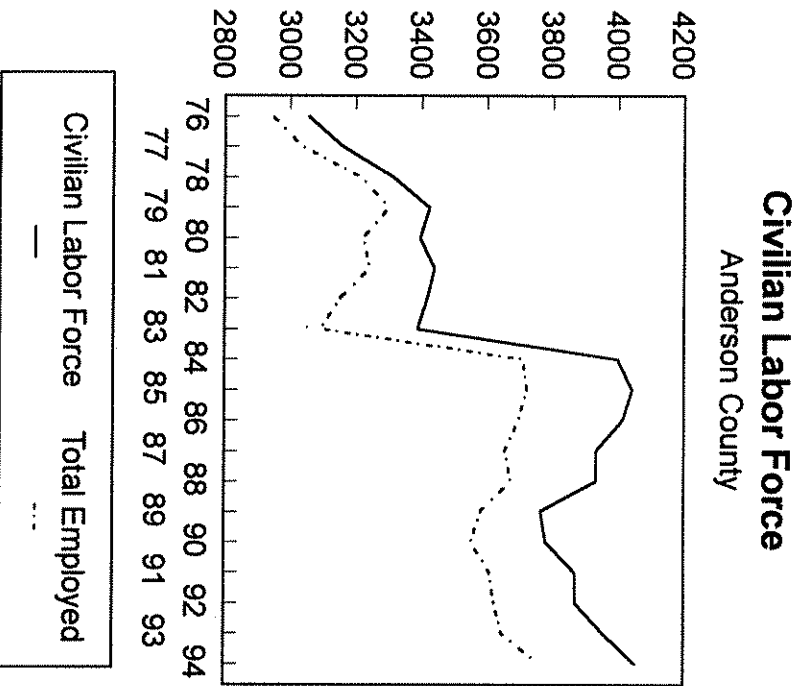
Unemployment Rate
Miami County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Anderson County (Osawatomie State Hospital)



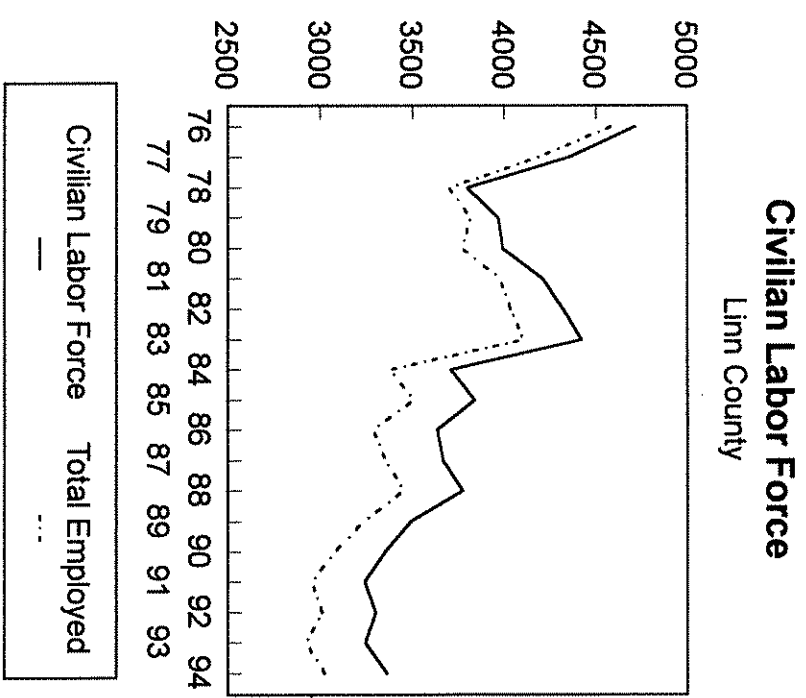
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

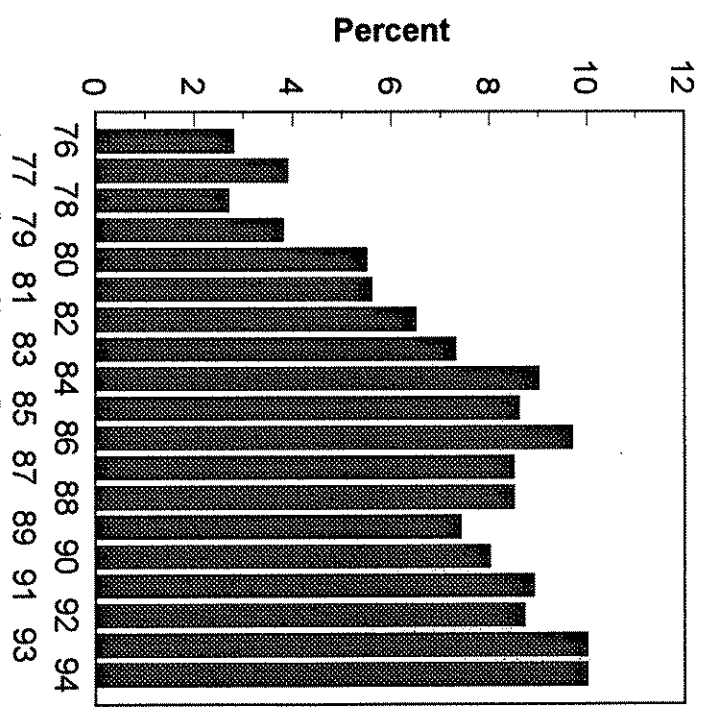
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Linn County (Osawatomie State Hospital)



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

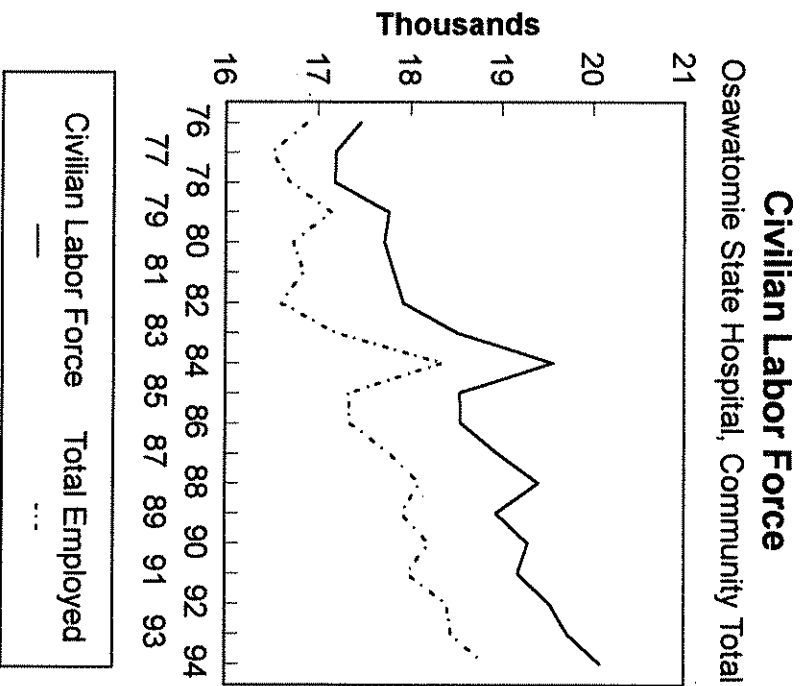
Unemployment Rate
Linn County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

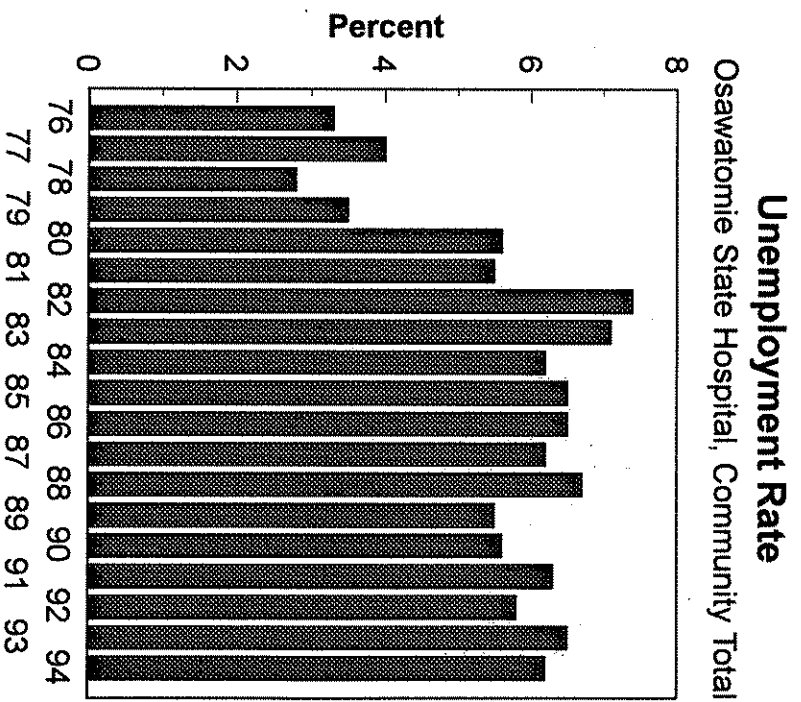
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Osawatomie State Hospital Community Total



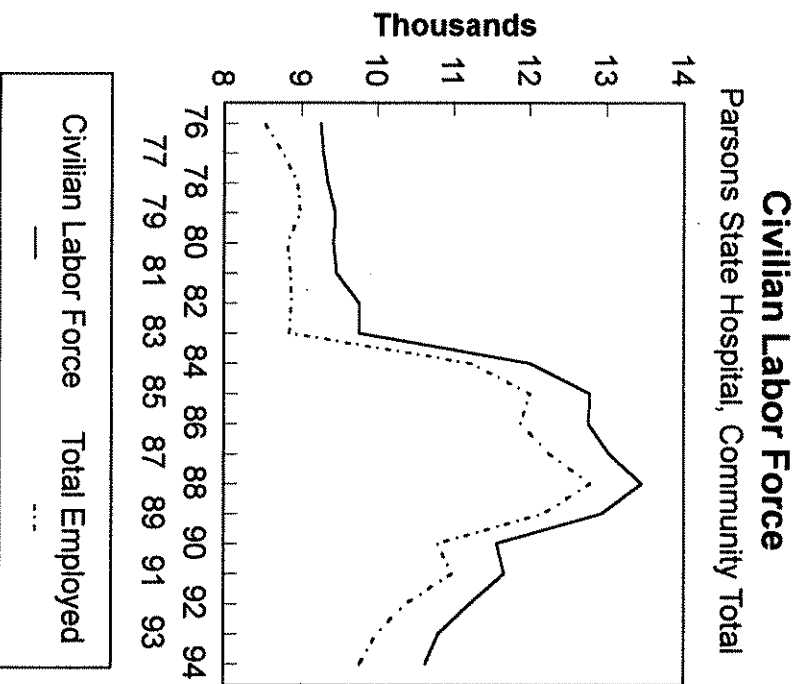
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



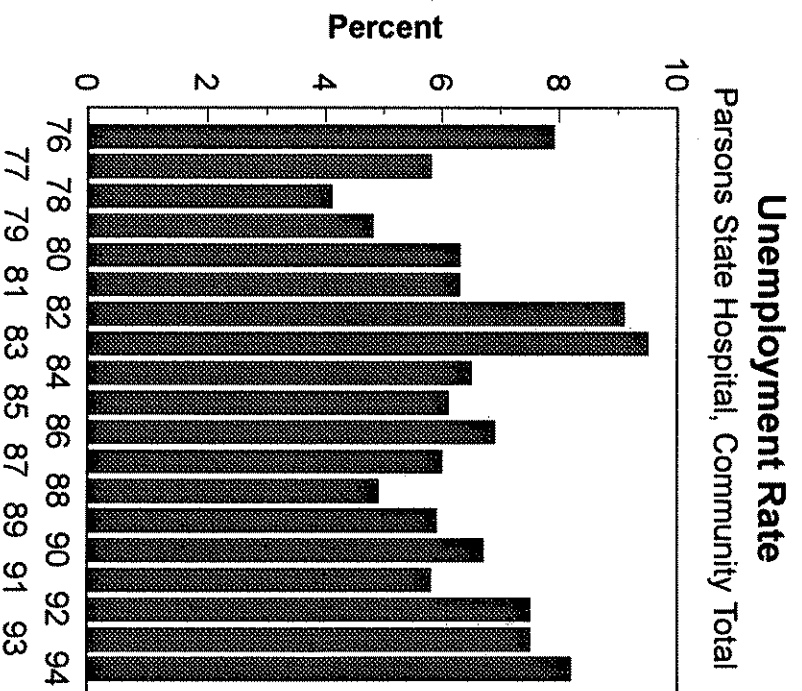
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

Chart D1. Civilian Labor Force Trends Parsons State Hospital Community Total



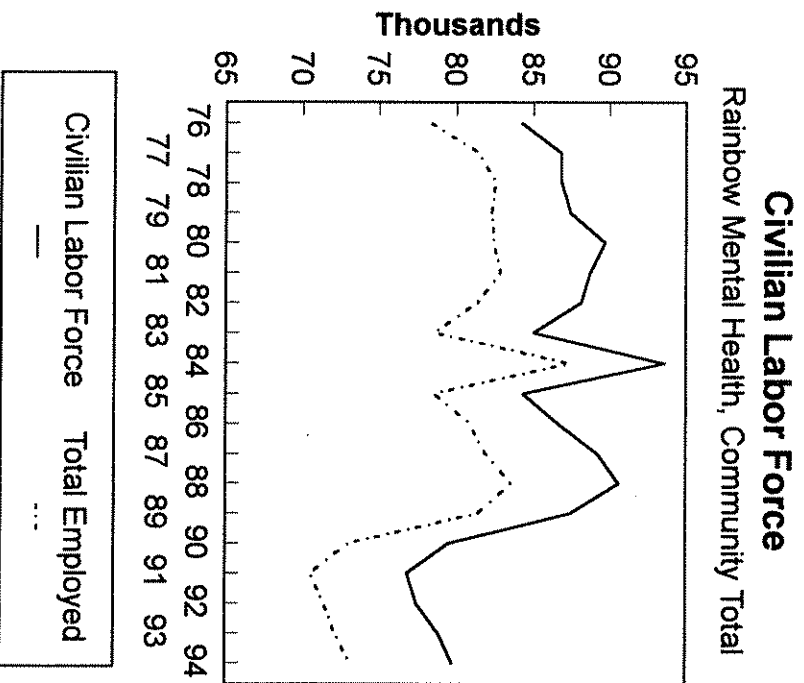
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



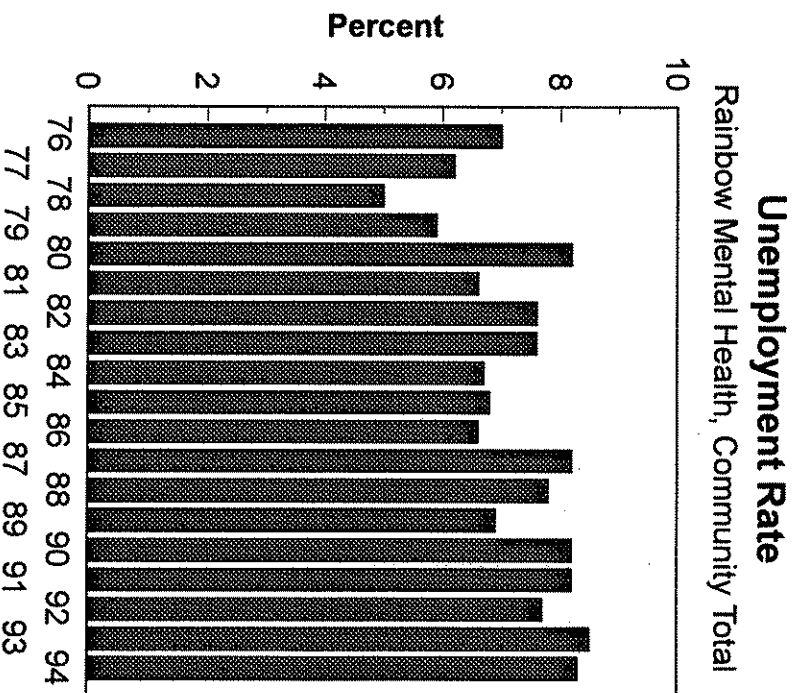
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

Chart D1. Civilian Labor Force Trends Rainbow Mental Health Facility Community Total



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

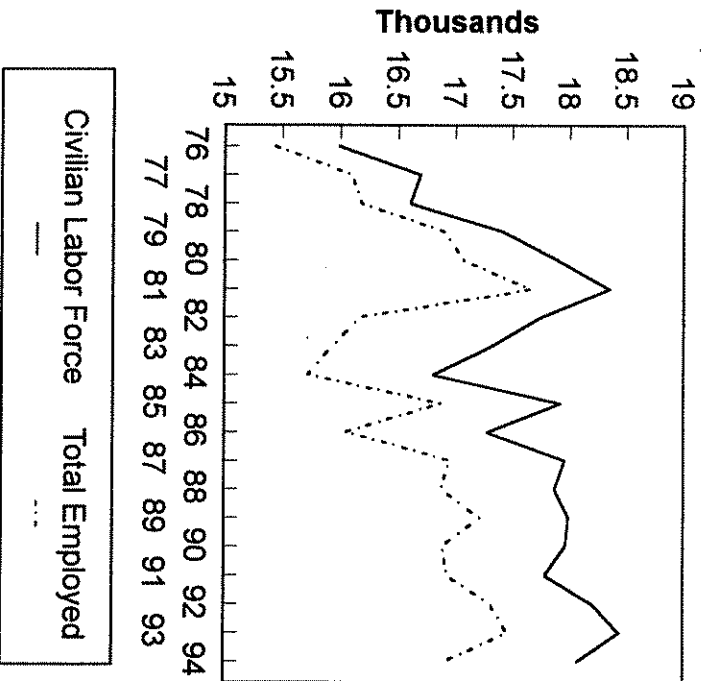
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

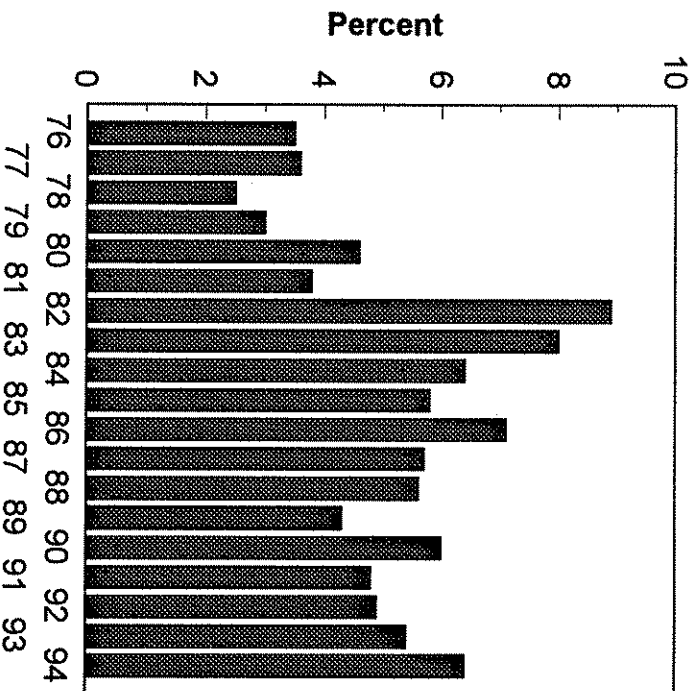
Chart D1. Civilian Labor Force Trends Cowley County (Winfield State Hospital)

Civilian Labor Force
Cowley County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

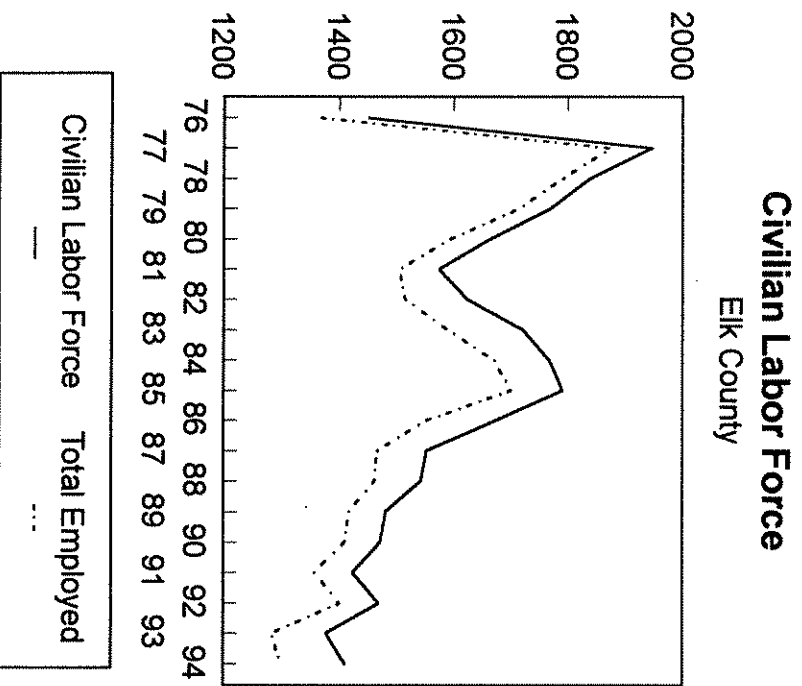
Unemployment Rate
Cowley County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

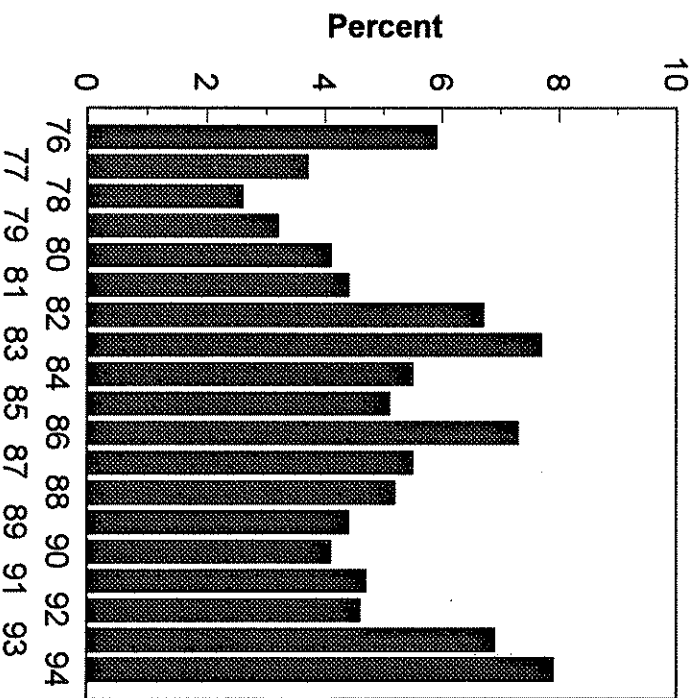
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Elk County (Winfield State Hospital)



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

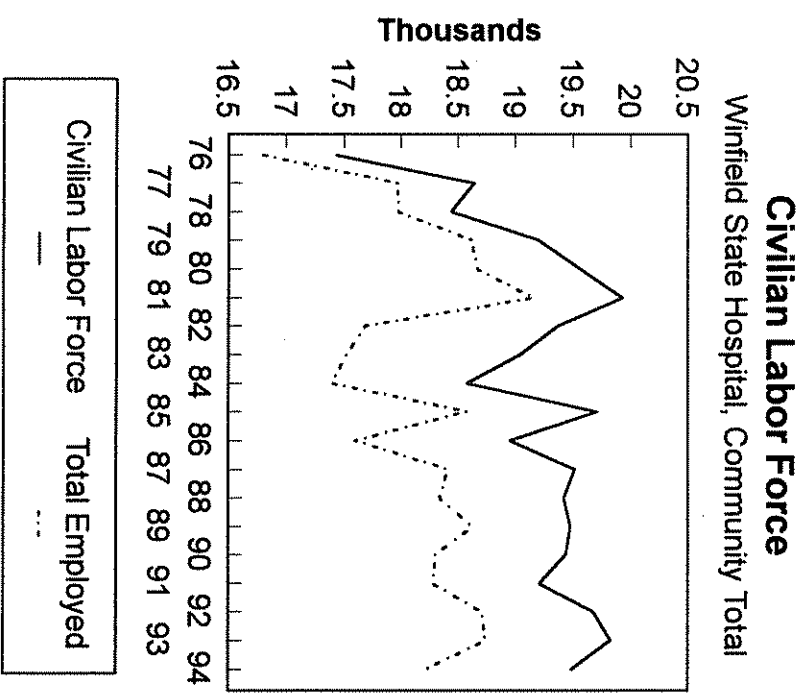
Unemployment Rate
Elk County



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

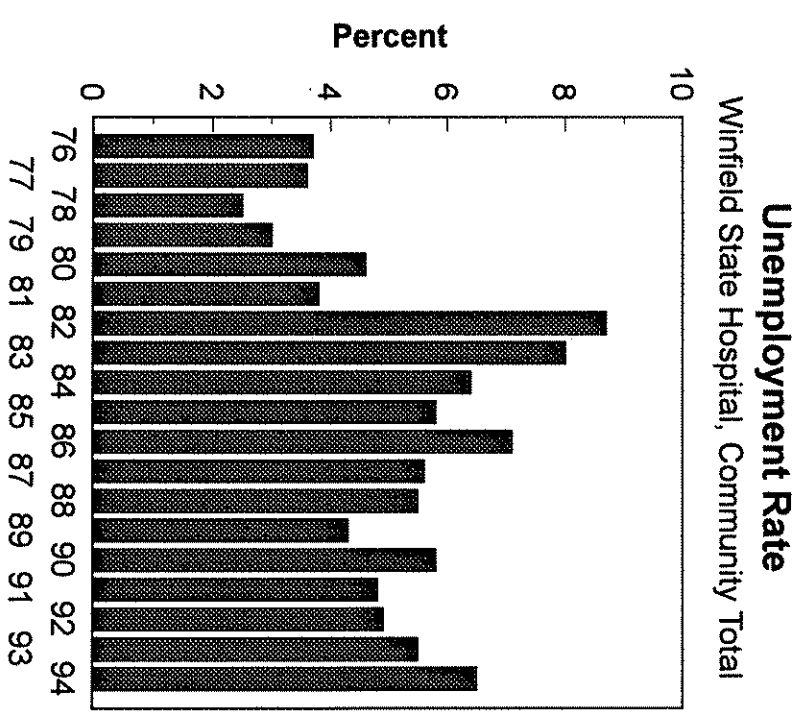
These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.

Chart D1. Civilian Labor Force Trends Winfield State Hospital Community Total



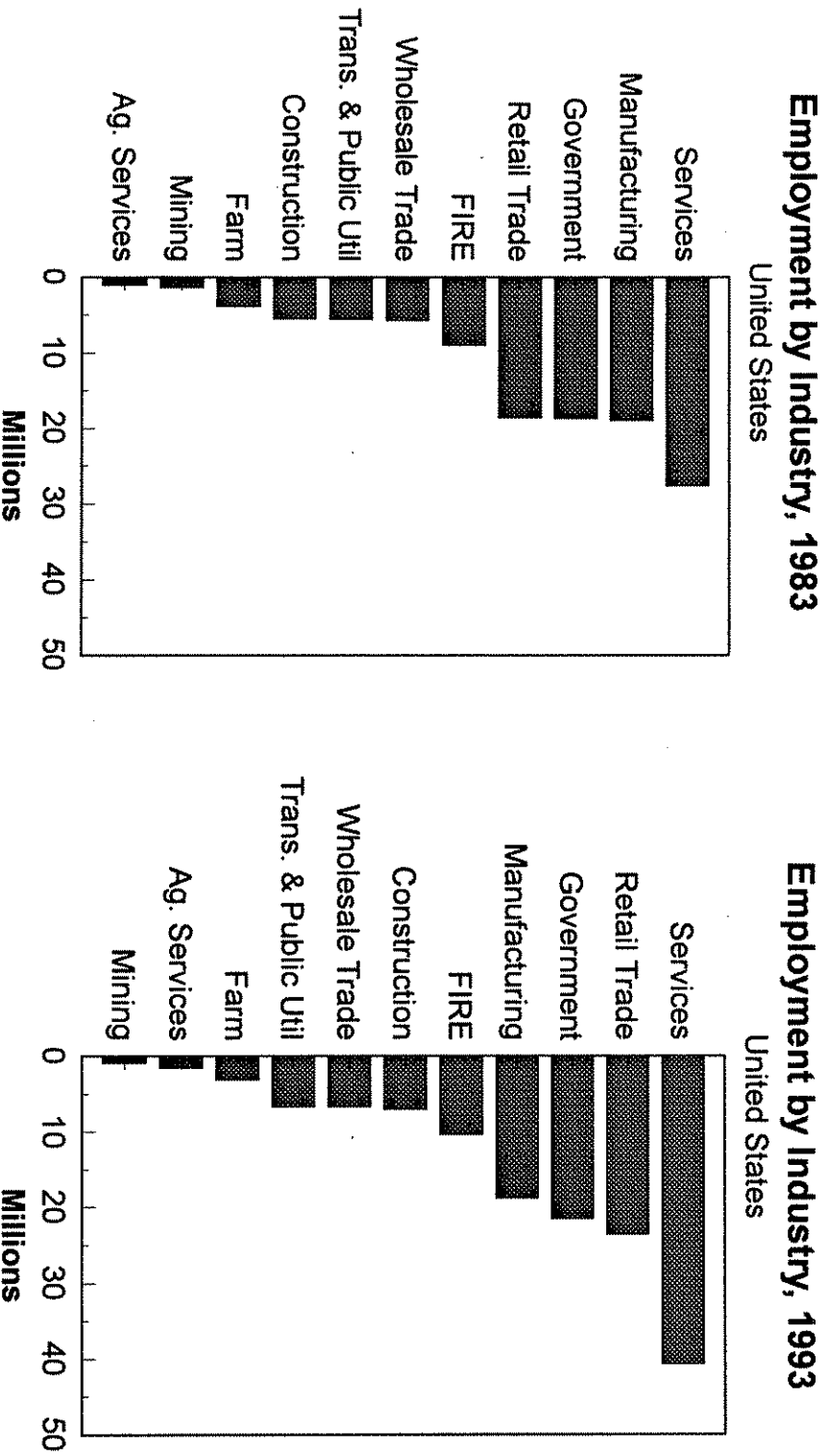
Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

These data are not strictly comparable over time due to changes in collection methodology. Changes occurred between 1983 and 84, 1989 and 90, and 1993 and 94.



Source: Kansas Dept. of Human Resources
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry United States



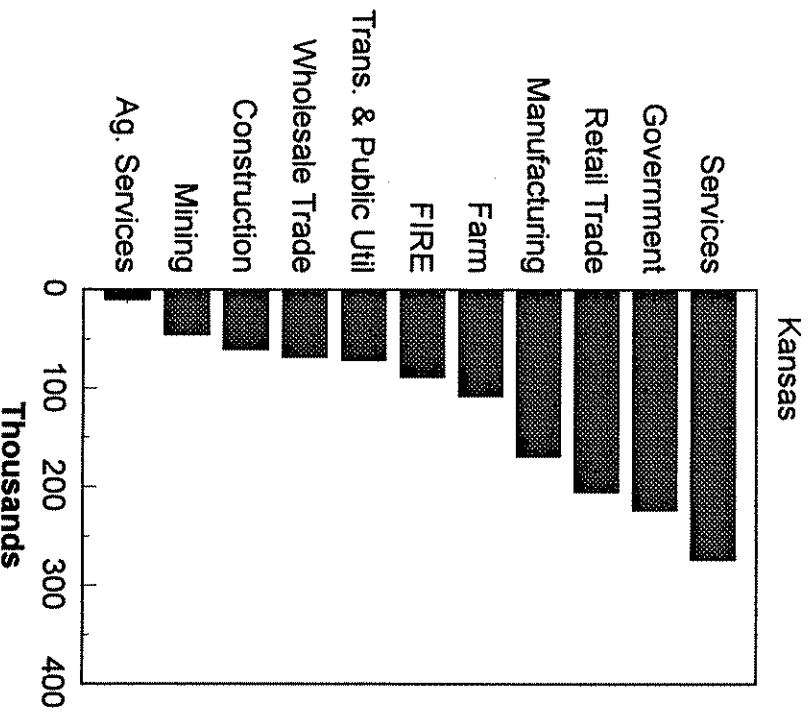
Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

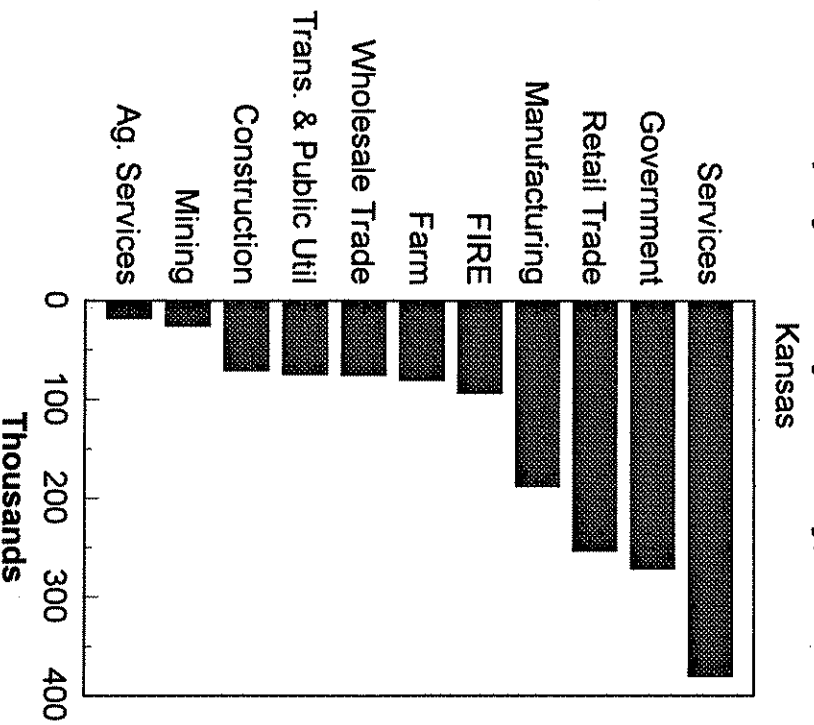
Chart D2. Employment by Industry

Kansas

Employment by Industry, 1983



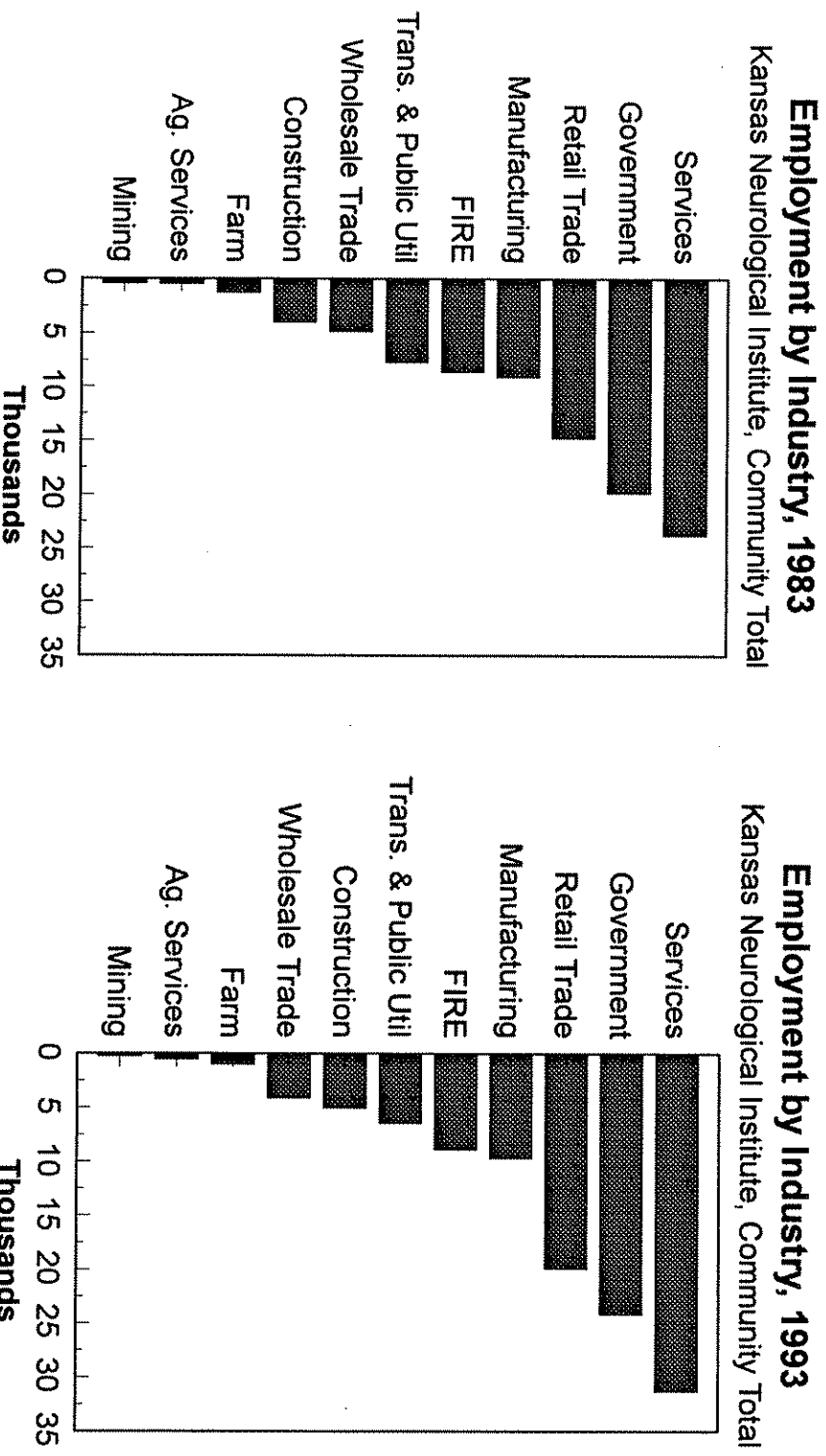
Employment by Industry, 1993



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
 Compiled by CEDBR, Wichita State University

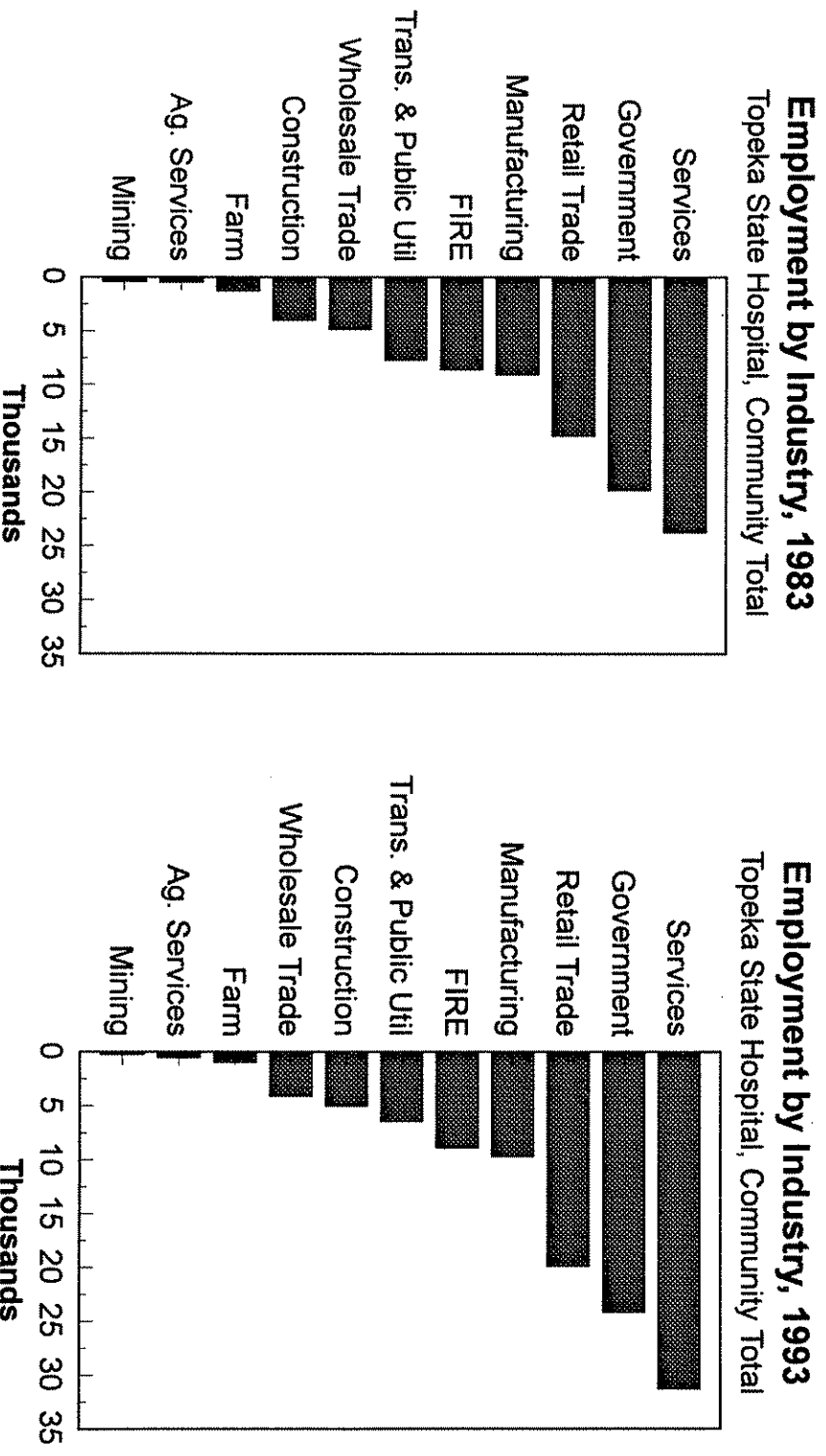
Chart D2. Employment by Industry Kansas Neurological Institute Community Total



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEIDBR, Wichita State University

Chart D2. Employment by Industry Topoka State Hospital Community Total



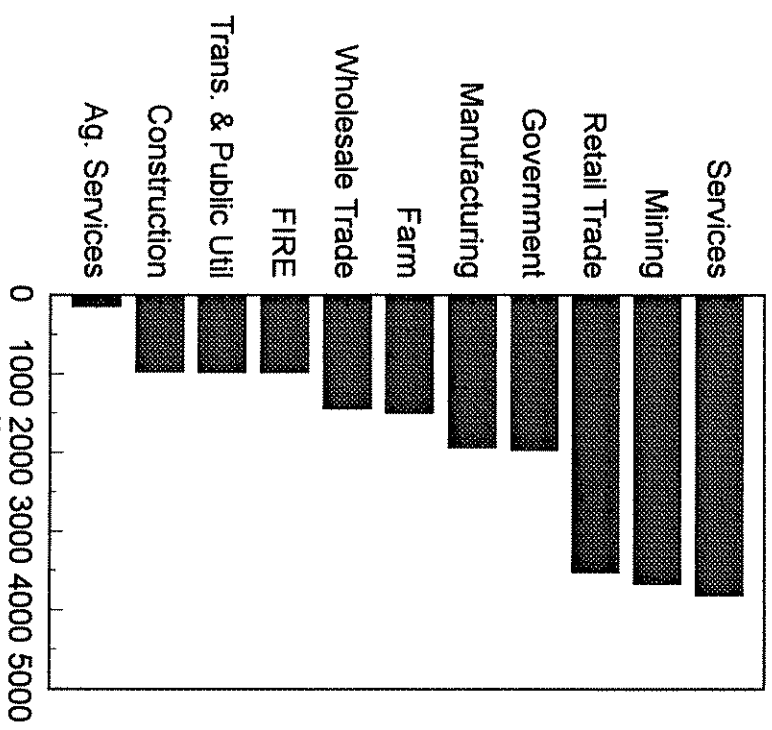
Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

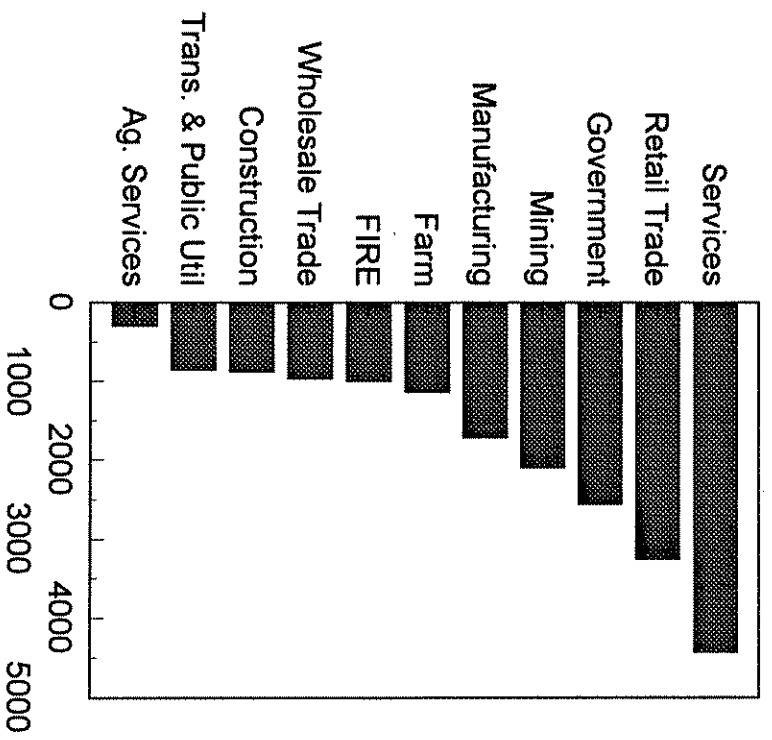
Chart D2. Employment by Industry Barton County

(Larned State Hospital)

Employment by Industry, 1983
Barton County



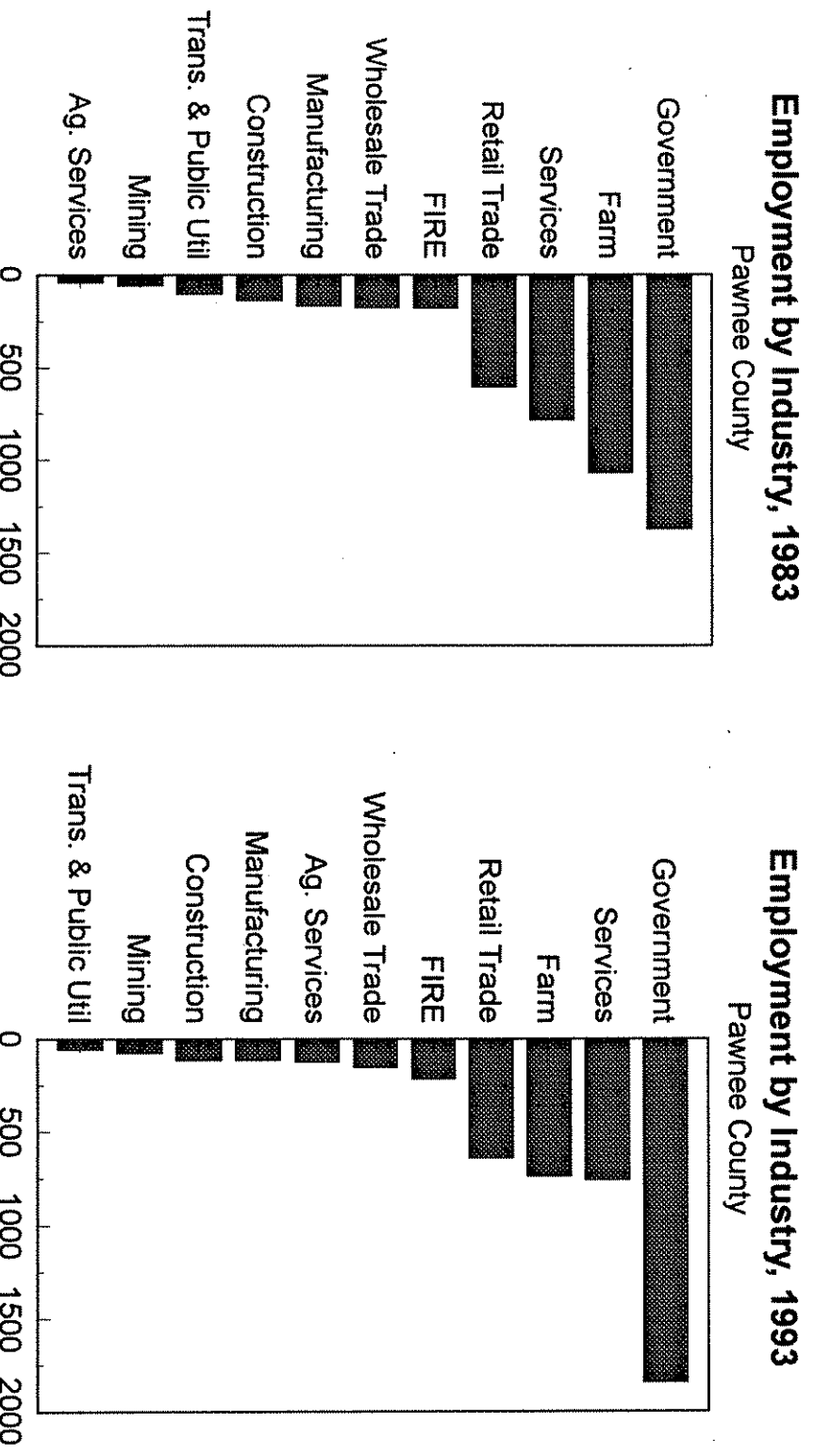
Employment by Industry, 1993
Barton County



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

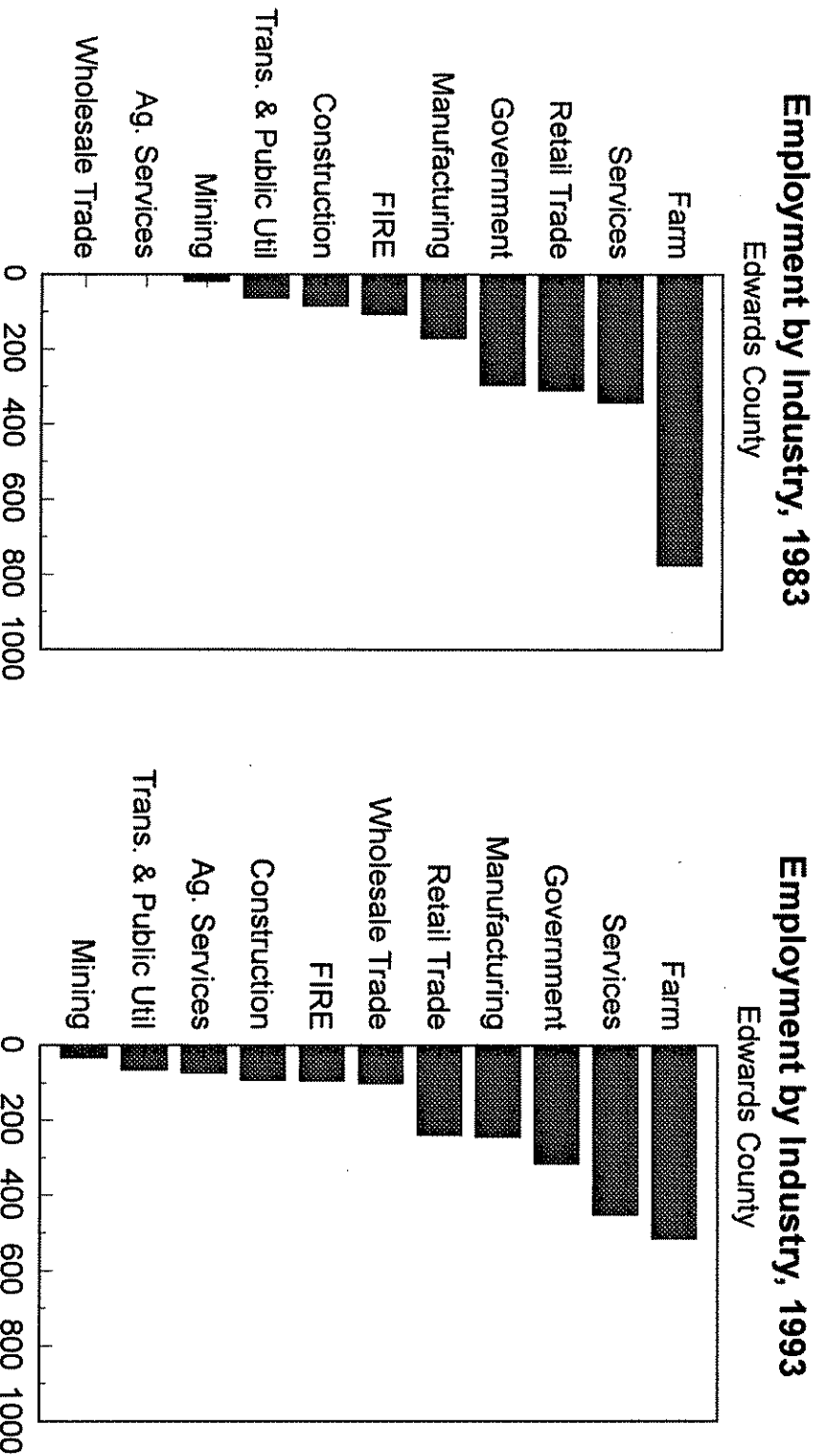
Chart D2. Employment by Industry Pawnee County (Larned State Hospital)



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

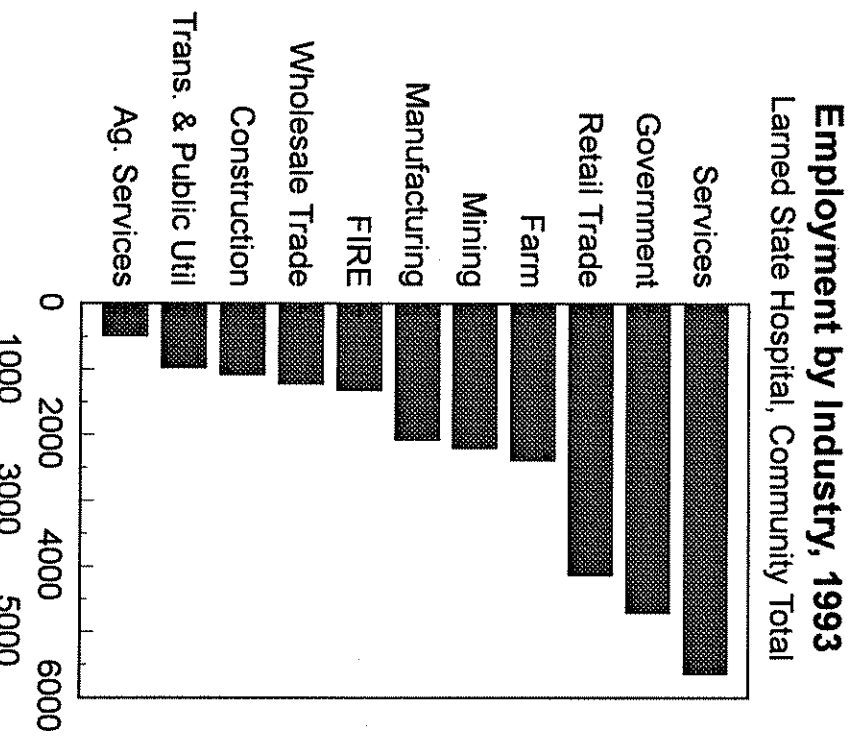
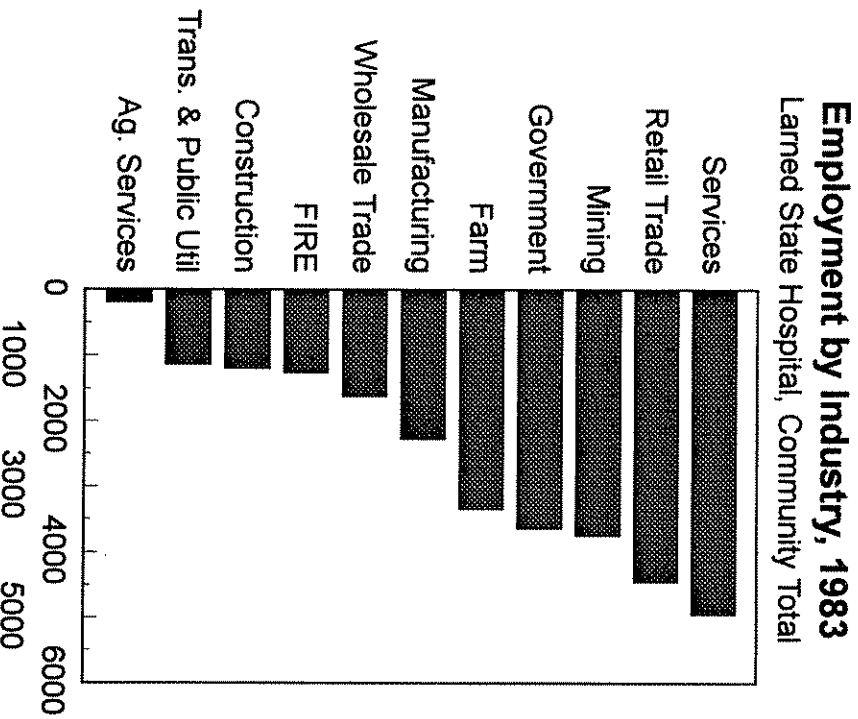
Chart D2. Employment by Industry Edwards County (Larned State Hospital)



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

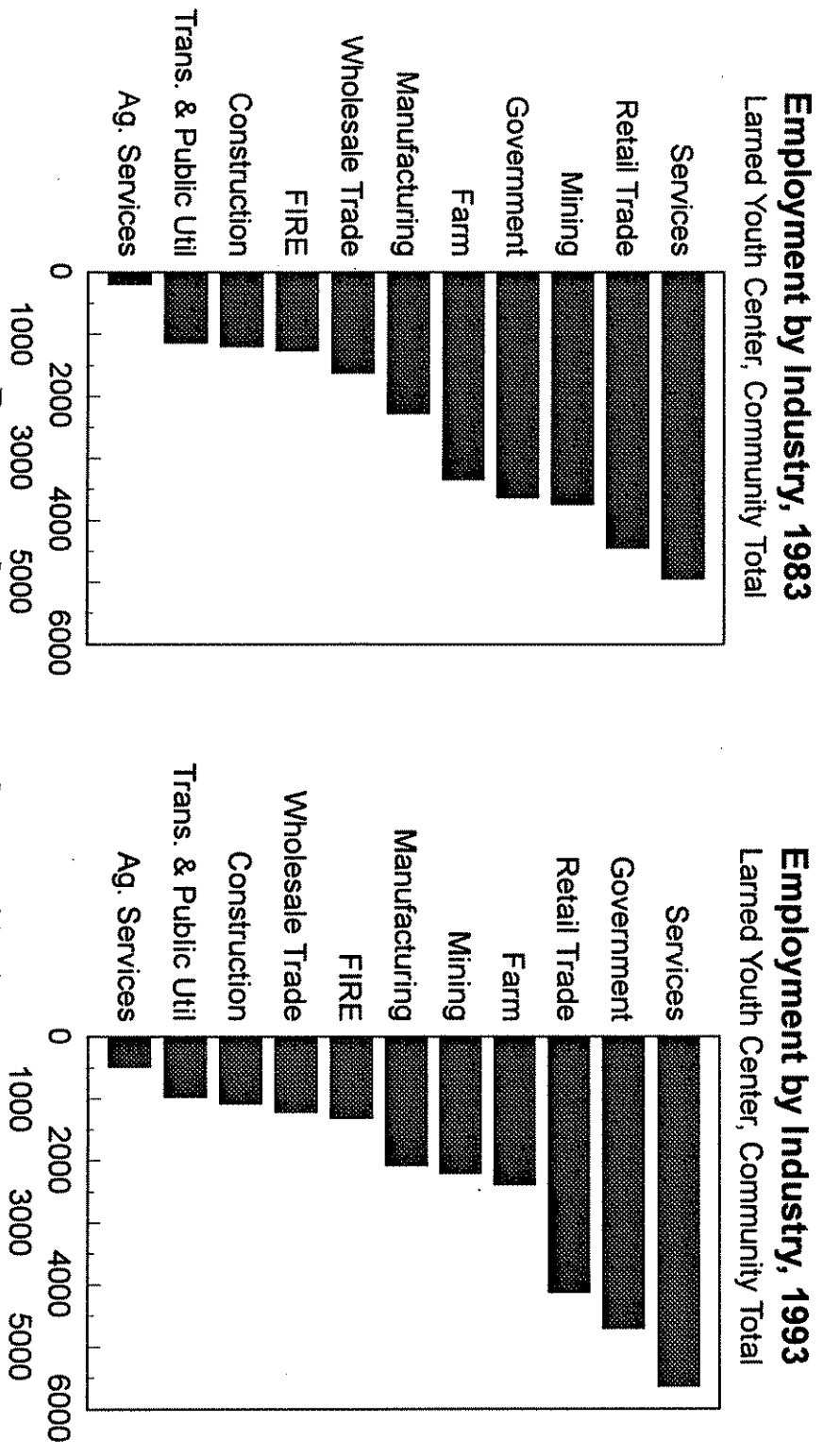
Chart D2. Employment by Industry Larned State Hospital Community Total



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry Larned Youth Center Community Total

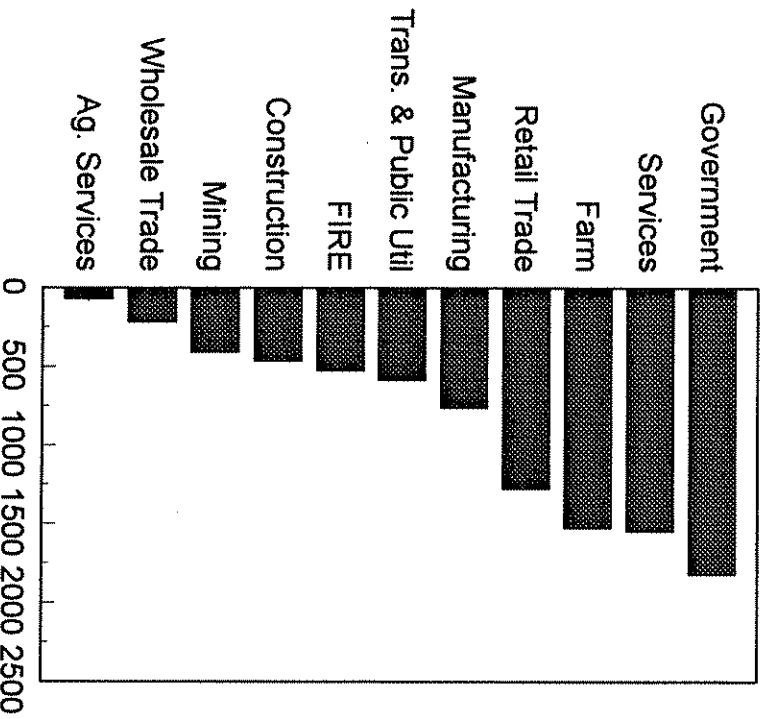


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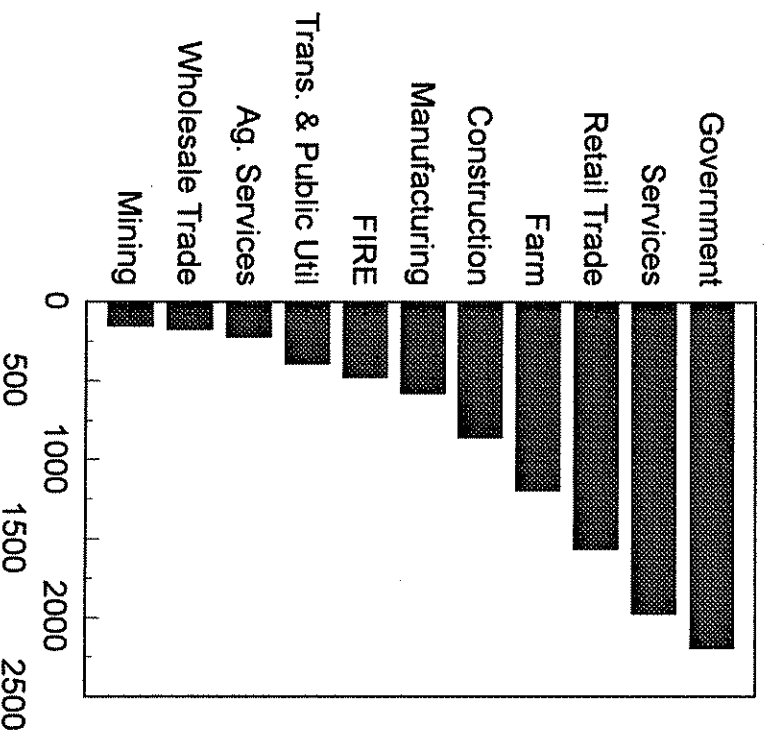
Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry Miami County (Osawatomie State Hospital)

Employment by Industry, 1983
Miami County



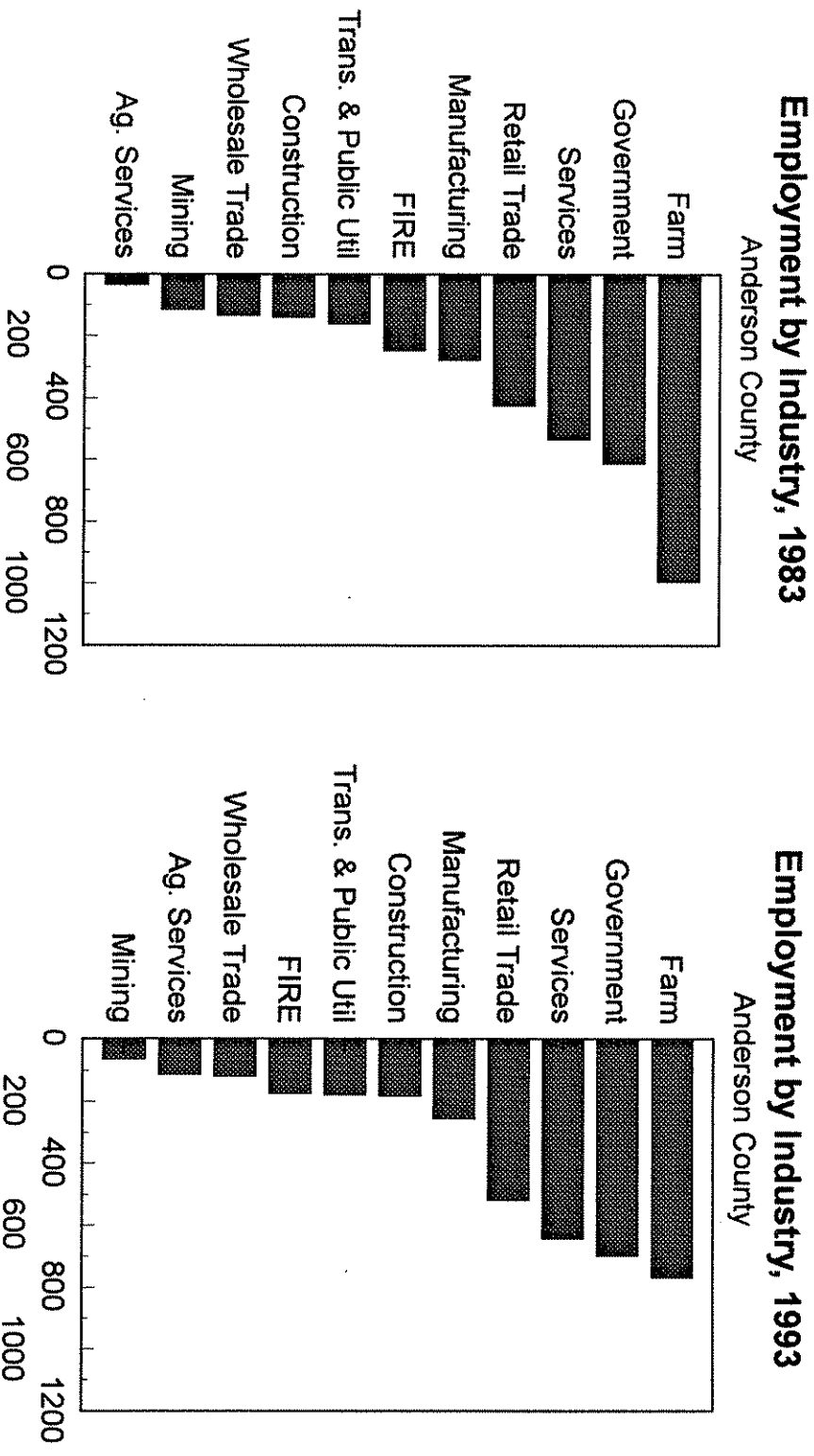
Employment by Industry, 1993
Miami County



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry Anderson County (Osawatomie State Hospital)

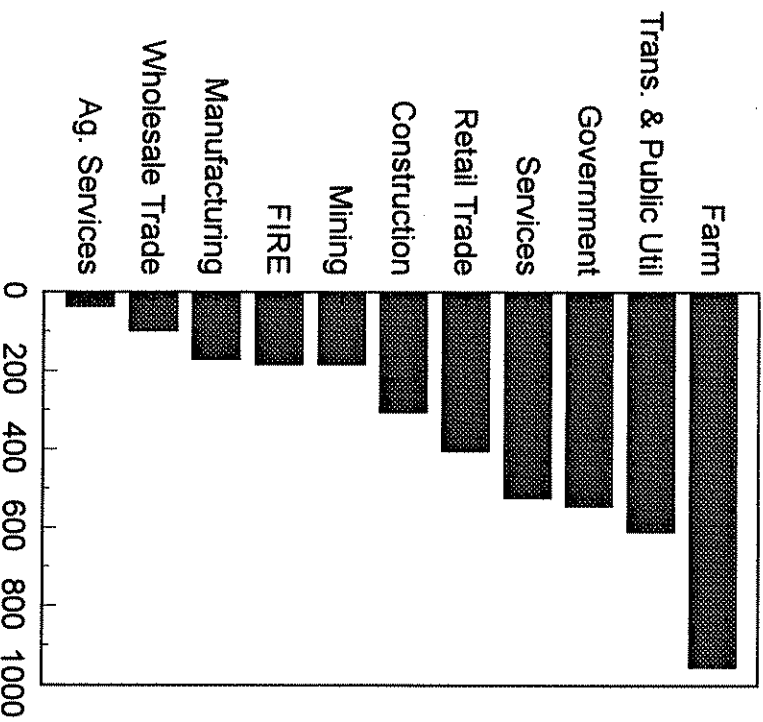


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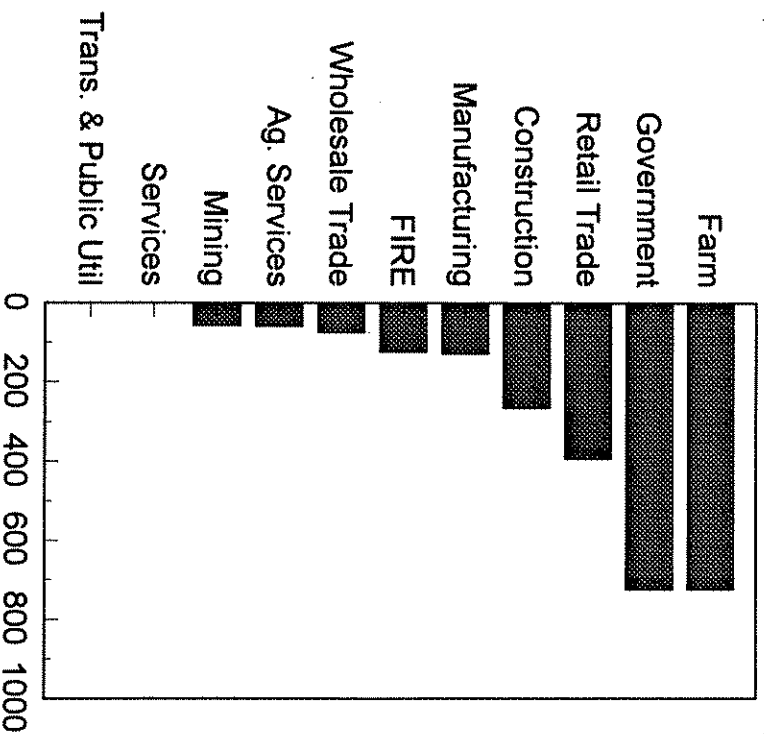
Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry Linn County (Osawatomie State Hospital)

Employment by Industry, 1983
Linn County



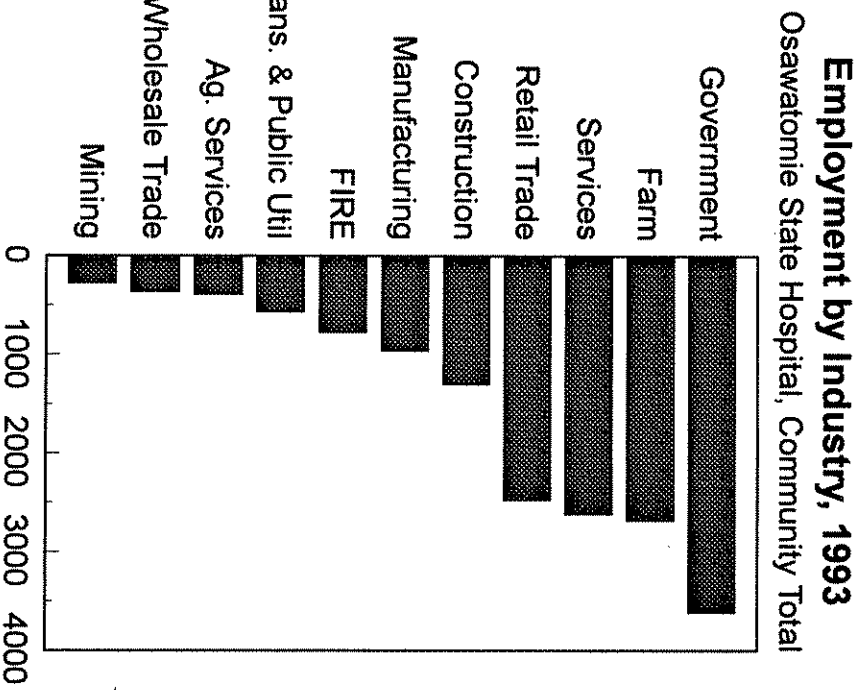
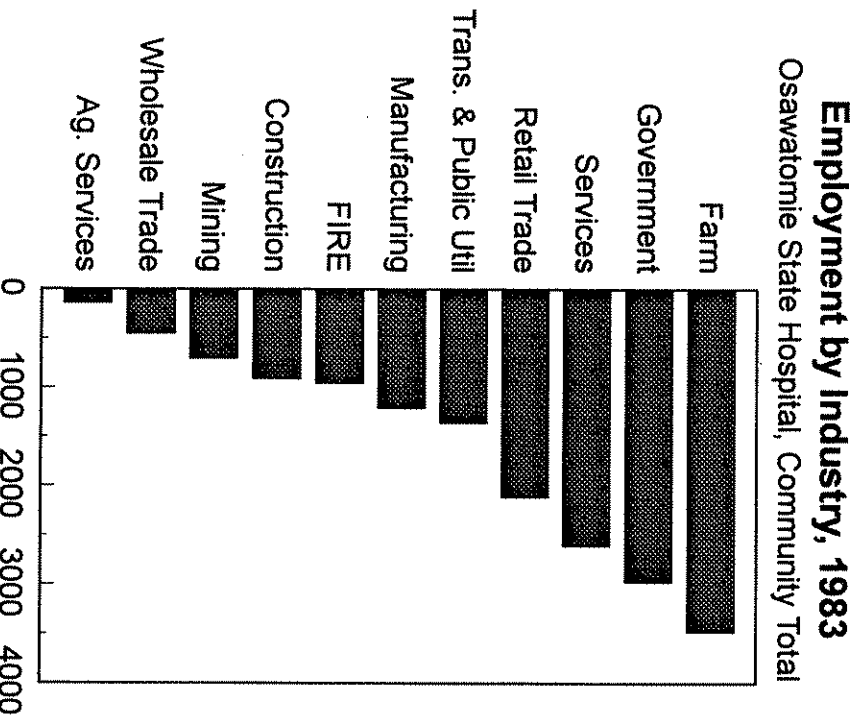
Employment by Industry, 1993
Linn County



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

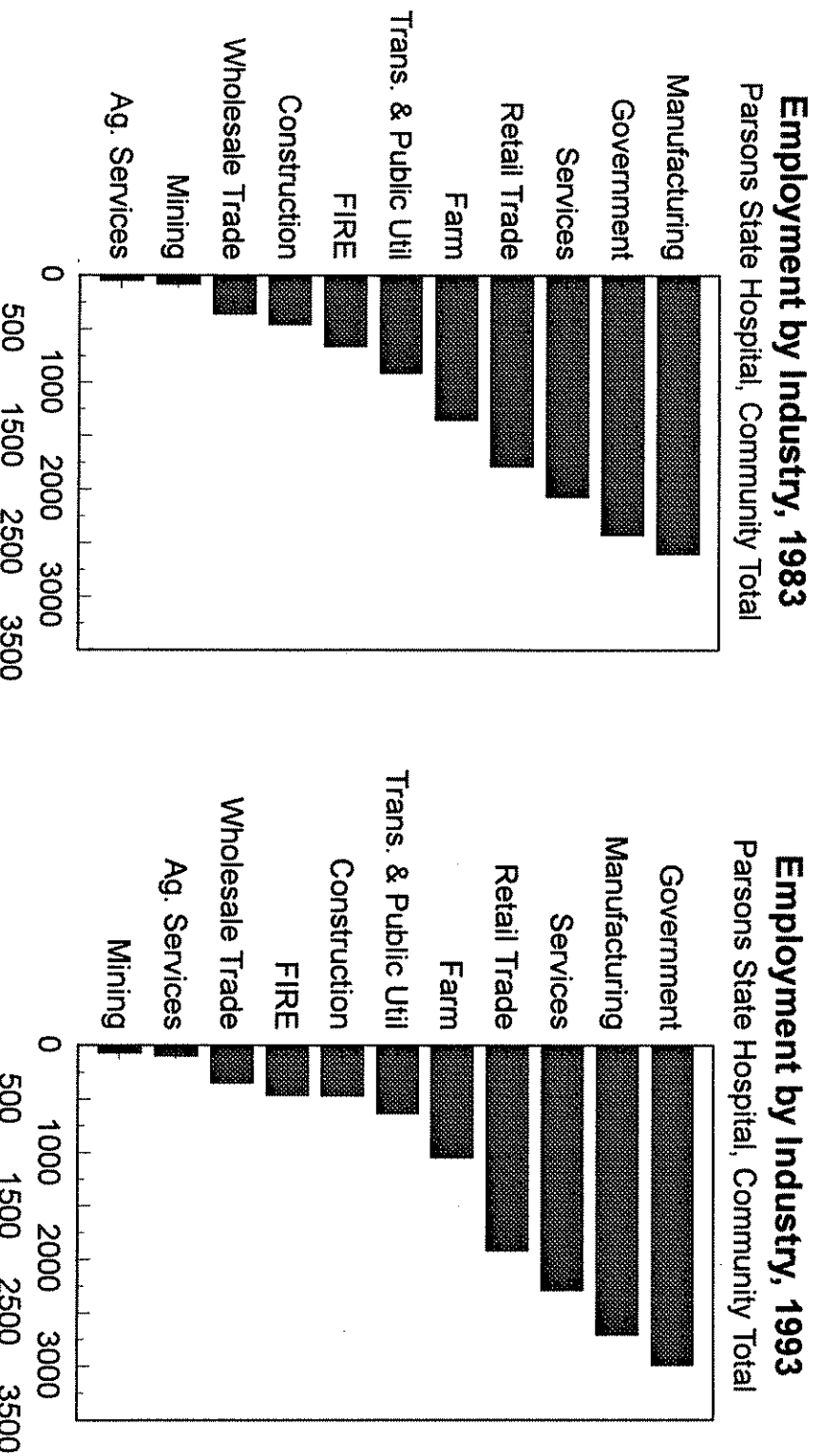
Chart D2. Employment by Industry Osawatomie State Hospital Community Total



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

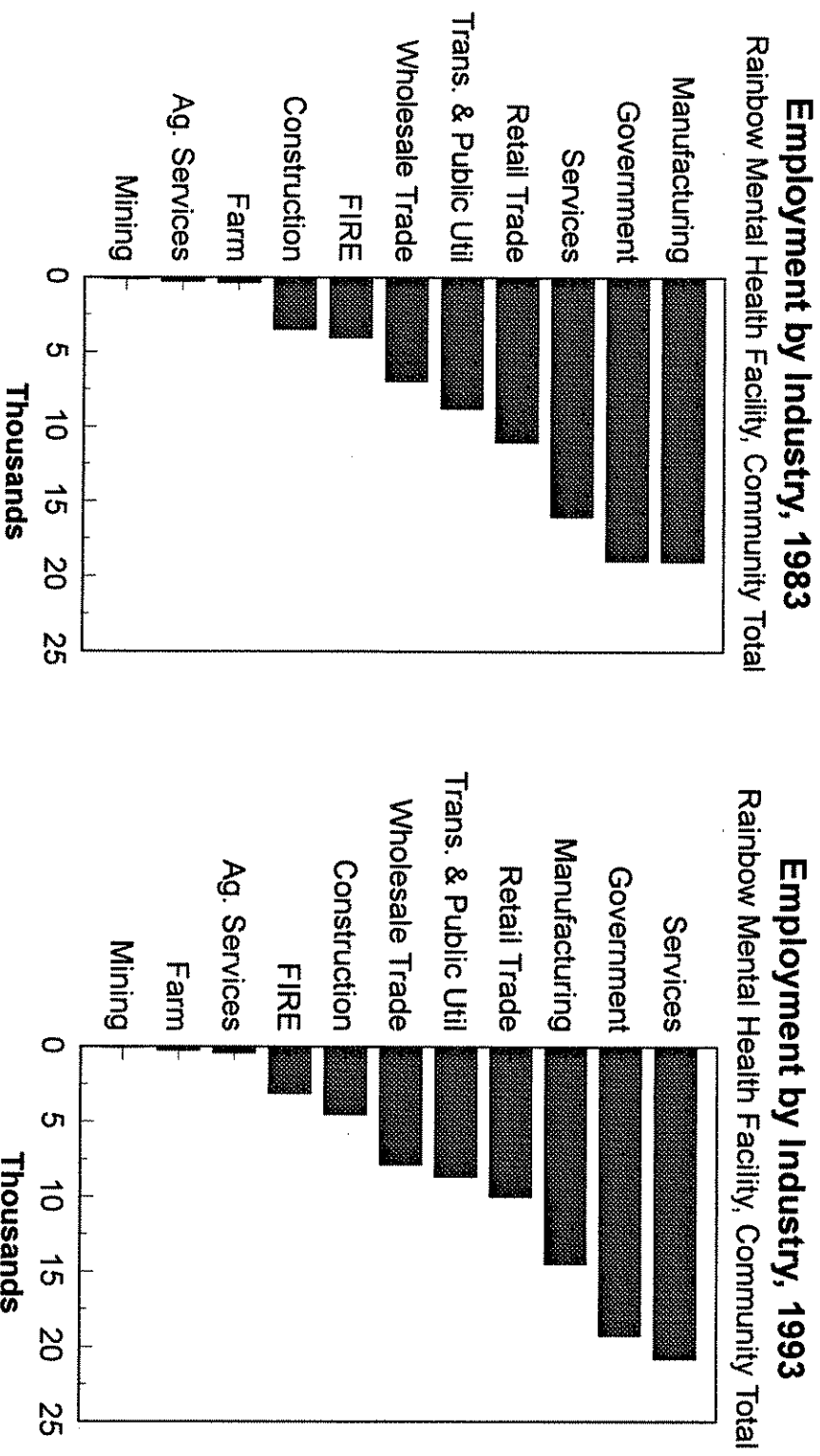
Chart D2. Employment by Industry Parsons State Hospital Community Total



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry Rainbow Mental Health Facility Community Total



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

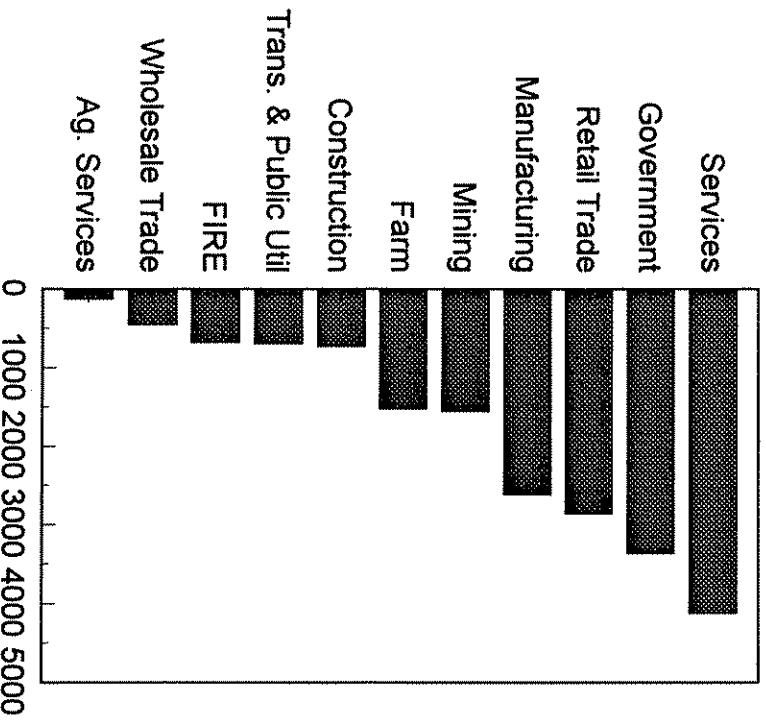
Chart D2. Employment by Industry

Cowley County

(Winfield State Hospital)

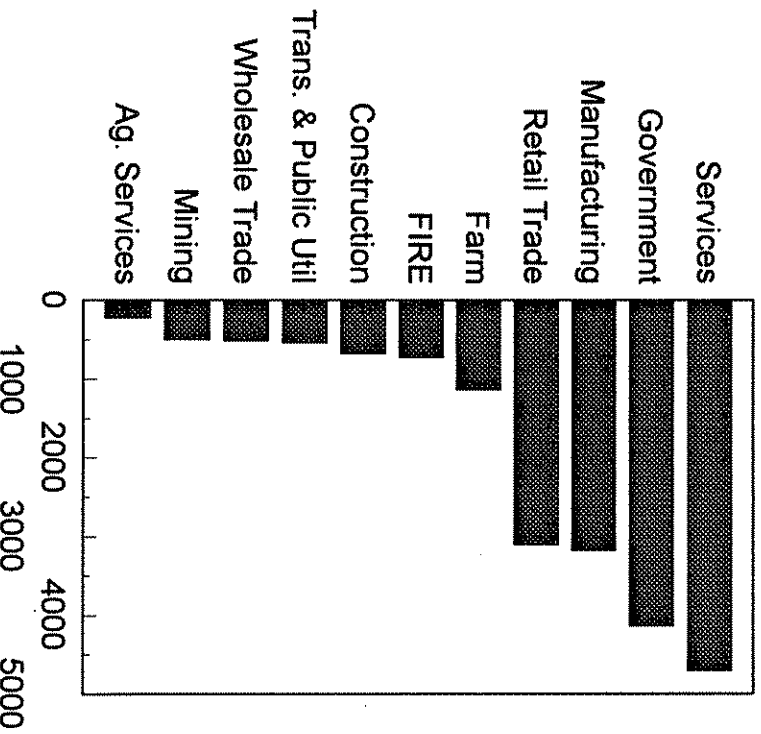
Employment by Industry, 1983

Cowley County



Employment by Industry, 1993

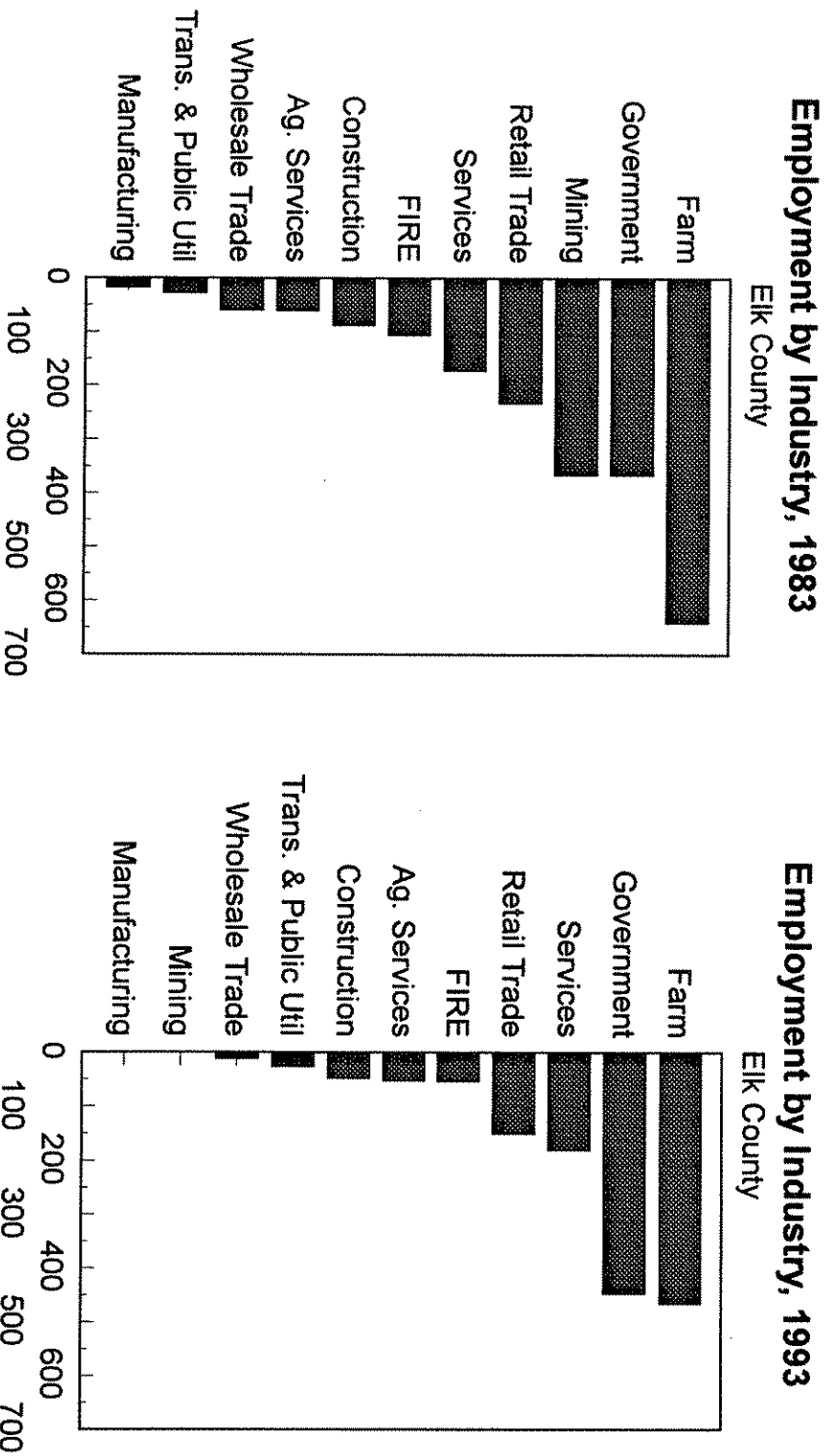
Cowley County



Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
 Compiled by CEDBR, Wichita State University

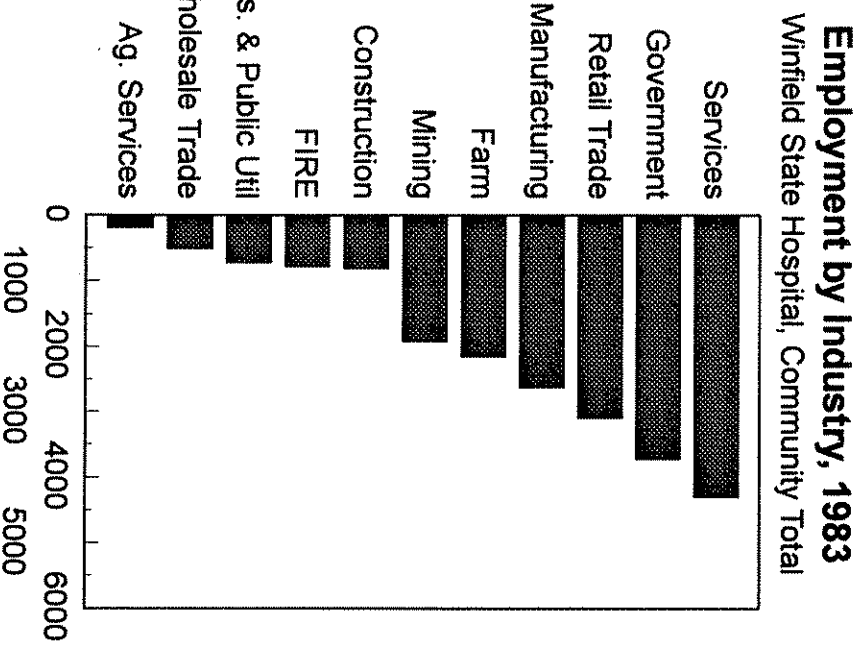
Chart D2. Employment by Industry Elk County (Winfield State Hospital)



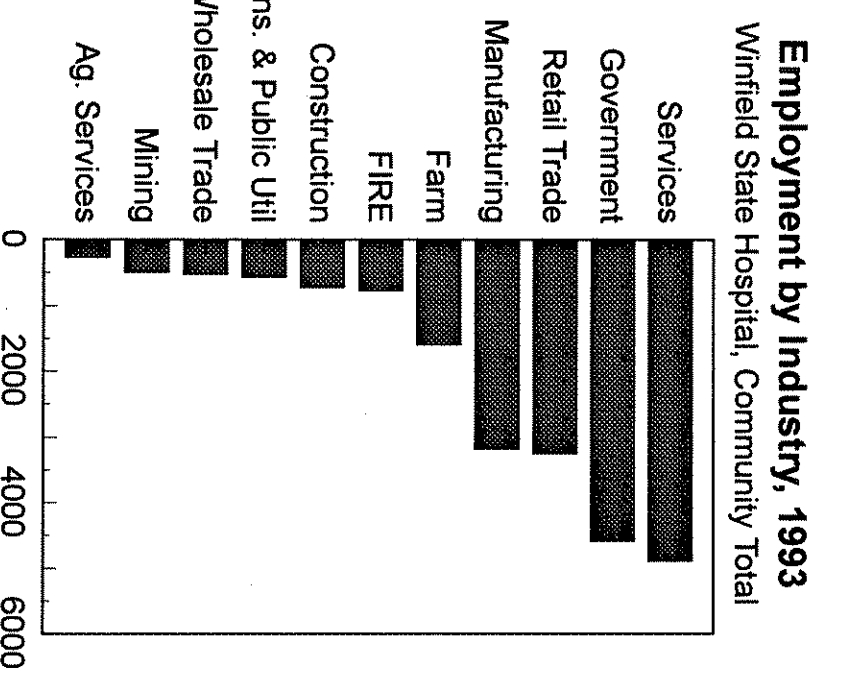
Data may be suppressed to avoid disclosure.

Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Chart D2. Employment by Industry Winfield State Hospital Community Total



Data may be suppressed to avoid disclosure



Source: Bureau of Economic Analysis
Compiled by CEDBR, Wichita State University

Table D1. Civilian Labor Force
Hospital Communities

	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
Keam																			
Civilian Labor Force	9,687	9,671	10,062	10,379	10,328	10,174	10,187	10,696	11,862	10,657	10,901	11,350	11,700	11,683	12,157	12,068	12,361	12,520	12,666
Total Employed	9,347	9,282	9,779	9,624	9,737	9,624	9,404	10,001	11,269	10,100	10,560	10,760	10,978	11,086	11,574	11,402	11,766	11,882	12,044
Unemployed	340	389	283	353	591	550	783	695	593	557	541	590	722	597	583	666	595	638	622
Unemployment Rate (Percent)	3.5	4.0	2.8	3.4	5.7	5.4	7.7	6.5	5.0	5.2	5.0	5.2	6.2	5.1	4.8	5.5	4.8	5.1	4.9
Parsons State Hospital, Agency 507																			
Community Total (Washoe County)	9,249	9,290	9,341	9,445	9,419	9,460	9,760	9,772	12,015	12,786	12,760	13,039	13,455	12,947	11,572	11,672	11,216	10,803	10,635
Civilian Labor Force	8,520	8,755	8,954	8,988	8,822	8,865	8,874	8,847	11,233	12,005	11,882	12,261	12,789	12,182	10,799	10,991	10,375	9,995	9,765
Total Employed	729	535	387	457	597	595	886	925	782	781	878	778	666	765	773	681	841	808	870
Unemployed	79	58	4.1	4.8	6.3	6.3	9.1	9.5	6.5	6.1	6.9	6.0	4.9	5.9	6.7	5.8	7.5	7.5	8.2
Unemployment Rate (Percent)	7.9	5.8	4.1	4.8	6.3	6.3	9.1	9.5	6.5	6.1	6.9	6.0	4.9	5.9	6.7	5.8	7.5	7.5	8.2
Rainbow Mental Health Facility, Agency 555																			
Community Total (Washoe County)	84,266	86,838	86,855	87,451	89,733	88,741	88,129	85,089	93,609	84,361	86,640	89,211	90,647	87,485	79,560	76,856	77,477	78,904	79,816
Civilian Labor Force	78,377	81,417	82,545	82,316	82,415	82,878	81,440	78,616	87,377	78,629	80,880	81,925	83,586	81,488	73,034	70,577	71,473	72,178	73,160
Total Employed	5,909	5,421	4,310	5,135	7,318	5,863	6,689	6,473	6,232	5,732	5,760	7,286	7,061	5,997	6,526	6,279	6,004	6,726	6,656
Unemployed	7.0	6.2	5.0	5.9	8.2	6.6	7.6	7.6	6.7	6.8	6.6	8.2	7.8	6.9	8.2	8.2	7.7	8.5	8.3
Unemployment Rate (Percent)	7.0	6.2	5.0	5.9	8.2	6.6	7.6	7.6	6.7	6.8	6.6	8.2	7.8	6.9	8.2	8.2	7.7	8.5	8.3
Toiyabe State Hospital, Agency 664																			
Community Total (Shoshone County)	89,433	90,462	94,340	95,978	95,893	95,698	94,581	81,470	83,357	87,204	87,053	90,893	92,308	92,351	86,911	86,002	88,177	89,095	89,124
Civilian Labor Force	85,168	86,618	90,290	92,139	90,610	90,592	88,150	76,377	78,688	82,804	82,595	86,626	87,369	86,998	82,718	81,916	84,341	84,658	84,722
Total Employed	4,265	3,844	3,400	3,839	3,283	3,106	6,431	5,093	4,669	4,400	4,460	4,267	4,359	3,853	4,193	4,086	3,836	4,437	4,452
Unemployed	4.8	4.2	3.6	4.0	3.5	3.3	6.8	6.3	5.6	5.1	5.1	4.7	4.7	4.2	4.8	4.8	4.4	5.0	5.0
Unemployment Rate (Percent)	4.8	4.2	3.6	4.0	3.5	3.3	6.8	6.3	5.6	5.1	5.1	4.7	4.7	4.2	4.8	4.8	4.4	5.0	5.0
Winnfield State Hospital, Agency 713																			
Community Total	17,438	18,642	18,446	19,201	19,571	19,933	19,378	19,049	18,581	19,715	18,958	19,517	19,422	19,479	19,441	19,217	19,678	19,827	19,492
Civilian Labor Force	16,797	17,972	17,978	18,618	18,672	19,168	17,689	17,530	17,400	18,577	17,604	18,416	18,345	18,633	18,304	18,290	18,711	18,744	18,218
Total Employed	641	670	468	583	899	765	1,689	1,519	1,181	1,138	1,354	1,101	1,077	846	846	967	967	1,083	1,274
Unemployed	3.7	3.6	2.5	3.0	4.6	3.8	8.7	8.0	6.4	5.8	7.1	5.6	5.5	4.3	5.8	4.8	4.9	5.5	6.5
Unemployment Rate (Percent)	3.7	3.6	2.5	3.0	4.6	3.8	8.7	8.0	6.4	5.8	7.1	5.6	5.5	4.3	5.8	4.8	4.9	5.5	6.5
Cowley																			
Civilian Labor Force	15,986	16,694	16,607	17,430	17,907	18,337	17,733	17,326	16,812	17,923	17,282	17,964	17,878	17,996	17,969	17,792	18,208	18,449	18,080
Total Employed	15,430	16,097	16,186	16,903	16,903	17,077	16,173	15,939	15,729	16,876	16,031	16,949	16,882	17,215	17,215	17,309	17,461	17,461	16,918
Unemployed	556	597	421	527	830	695	1,580	1,387	1,083	1,047	1,231	1,015	996	781	1,076	899	899	988	1,162
Unemployment Rate (Percent)	3.5	3.6	2.5	3.0	4.6	3.8	8.9	8.0	6.4	5.8	7.1	5.7	5.6	4.3	6.0	4.8	4.9	5.4	6.4
Elk																			
Civilian Labor Force	1,452	1,948	1,839	1,771	1,664	1,576	1,625	1,723	1,769	1,792	1,676	1,553	1,444	1,483	1,472	1,425	1,470	1,378	1,412
Total Employed	1,367	1,875	1,792	1,715	1,595	1,596	1,516	1,591	1,671	1,701	1,553	1,467	1,463	1,418	1,411	1,358	1,402	1,283	1,300
Unemployed	85	73	47	56	69	70	109	132	98	91	123	86	81	65	61	67	68	95	112
Unemployment Rate (Percent)	5.9	3.7	2.6	3.2	4.1	4.4	6.7	7.7	5.5	5.1	7.3	5.5	5.2	4.4	4.1	4.7	4.6	6.9	7.9
Kenias State Total																			
Civilian Labor Force	1,072,000	1,106,000	1,142,000	1,176,000	1,184,000	1,190,000	1,185,000	1,186,000	1,196,000	1,237,000	1,237,000	1,268,000	1,282,000	1,284,000	1,276,000	1,272,000	1,314,000	1,326,000	1,331,000
Total Employed	1,027,000	1,061,000	1,107,000	1,137,000	1,131,000	1,140,000	1,111,000	1,114,000	1,133,000	1,176,000	1,169,000	1,205,000	1,221,000	1,233,000	1,220,000	1,216,000	1,259,000	1,259,000	1,261,000
Unemployed	46,000	44,000	35,000	39,000	53,000	50,000	74,000	72,000	63,000	62,000	67,000	63,000	61,000	52,000	56,000	56,000	55,000	66,000	70,000
Unemployment Rate (Percent)	4.2	4	3	3.4	4.5	4.2	6.3	6.1	5.3	5	5.4	4.9	4.8	4	4.4	4.4	4.2	5	5.3
United States																			
Civilian Labor Force	96,158,000	99,009,000	102,251,000	104,962,000	106,540,000	108,670,000	110,204,000	111,550,000	113,544,000	115,461,000	117,834,000	119,865,000	121,669,000	123,869,000	124,787,000	125,303,000	126,982,000	128,040,000	131,056,000
Total Employed	88,752,000	92,017,000	96,848,000	98,824,000	99,303,000	100,397,000	99,526,000	100,834,000	105,000,000	107,150,000	109,597,000	112,440,000	114,968,000	117,342,000	117,914,000	116,877,000	117,599,000	119,306,000	123,060,000
Unemployed	7,406,000	6,992,000	6,202,000	6,137,000	7,637,000	8,273,000	10,678,000	10,717,000	8,539,000	8,312,000	8,237,000	7,425,000	6,701,000	6,528,000	6,874,000	8,426,000	9,384,000	8,734,000	7,996,000
Unemployment Rate (Percent)	7.7	7.1	6.1	5.8	7.1	7.6	9.7	9.6	7.5	7.2	7.0	6.2	5.5	5.3	5.5	6.7	7.4	6.8	6.1

Source: KCIHR
Compiled by CEDBR, WSU

Table D1. Civilian Labor Force Hospital Communities

	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
Kenans Neurological Institute, Agency 343																			
Community Total	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
Civilian Labor Force	89,433	90,462	94,340	95,978	95,893	95,698	94,581	81,470	83,357	87,224	87,053	90,893	92,308	92,351	86,911	86,002	84,177	89,095	89,174
Total Employed	85,168	86,618	90,940	92,139	90,610	90,592	88,150	76,377	78,669	82,804	82,593	86,626	87,949	88,698	82,718	81,916	84,341	84,658	84,722
Unemployed	4,265	3,844	3,400	3,839	5,283	5,106	6,431	5,093	4,689	4,420	4,460	4,267	4,359	3,653	4,193	4,086	3,836	4,437	4,452
Unemployment Rate (Percent)	4.8	4.2	3.6	4.0	5.5	5.3	6.8	6.3	5.6	5.1	5.1	4.7	4.7	4.2	4.8	4.8	4.4	4.9	5.0
Learned Health Hospital, Agency 410																			
Community Total	21,768	22,381	22,908	23,628	23,642	24,500	24,646	24,373	22,227	22,647	21,566	20,401	19,917	19,787	20,716	20,694	21,224	21,090	21,118
Civilian Labor Force	21,768	22,381	22,908	23,628	23,642	24,500	24,646	24,373	22,227	22,647	21,566	20,401	19,917	19,787	20,716	20,694	21,224	21,090	21,118
Total Employed	21,229	21,811	22,450	22,939	22,990	23,924	23,610	23,168	21,345	21,508	19,704	19,107	18,935	19,050	19,978	19,978	20,397	20,112	19,988
Unemployed	539	570	458	689	652	576	1,036	1,205	982	1,139	1,862	1,294	982	737	738	763	827	978	1,130
Unemployment Rate (Percent)	2.5	2.5	2.0	2.9	2.8	2.4	4.2	4.9	4.4	5.0	8.6	6.3	4.9	3.7	3.6	3.9	3.9	4.6	5.4
Barton																			
Civilian Labor Force	16,033	16,594	17,158	17,876	18,019	18,989	19,134	18,918	16,749	17,176	16,234	15,042	14,545	14,426	15,180	15,198	15,491	15,354	15,411
Total Employed	15,612	16,144	16,796	17,246	17,494	18,247	18,294	17,912	15,962	16,235	14,592	13,941	13,725	13,824	14,586	14,597	14,884	14,584	14,496
Unemployed	421	450	362	580	525	442	840	1,006	787	941	1,642	1,101	820	602	594	601	607	770	915
Unemployment Rate (Percent)	2.6	2.7	2.1	3.3	2.9	2.3	4.4	5.3	4.7	5.5	10.1	7.3	5.6	4.2	3.9	4.0	4.2	5.0	5.9
Edwards																			
Civilian Labor Force	1,703	1,799	1,774	1,810	1,762	1,615	1,569	1,606	1,820	1,773	1,710	1,680	1,672	1,671	1,839	1,826	1,821	1,865	1,892
Total Employed	1,632	1,747	1,733	1,764	1,703	1,561	1,509	1,537	1,751	1,698	1,635	1,610	1,614	1,629	1,807	1,772	1,759	1,793	1,880
Unemployed	51	52	41	46	59	54	60	69	69	75	75	70	58	42	52	54	62	72	86
Unemployment Rate (Percent)	3.0	2.9	2.3	2.5	3.3	3.3	3.8	4.3	3.8	4.2	4.4	4.2	3.5	2.5	2.8	3.0	3.4	3.9	4.5
Pawnee																			
Civilian Labor Force	4,032	3,998	3,976	3,992	3,861	3,896	3,843	3,849	3,638	3,698	3,622	3,679	3,700	3,690	3,677	3,670	3,912	3,870	3,815
Total Employed	3,965	3,870	3,921	3,929	3,793	3,816	3,807	3,719	3,532	3,575	3,477	3,456	3,596	3,597	3,585	3,562	3,794	3,735	3,686
Unemployed	67	78	55	63	68	80	136	130	106	123	145	123	104	92	92	108	118	135	129
Unemployment Rate (Percent)	1.7	2.0	1.4	1.6	1.8	2.1	3.4	3.4	2.9	3.3	4.0	3.3	2.8	2.5	2.5	2.9	3.0	3.5	3.4
Overseas State Hospital, Agency 494																			
Community Total	17,459	17,189	17,176	17,769	17,715	17,823	17,924	18,510	19,569	18,539	18,552	18,952	19,408	18,944	19,288	19,179	19,533	19,722	20,083
Civilian Labor Force	17,459	17,189	17,176	17,769	17,715	17,823	17,924	18,510	19,569	18,539	18,552	18,952	19,408	18,944	19,288	19,179	19,533	19,722	20,083
Total Employed	16,877	16,502	16,691	17,145	16,731	16,842	16,935	17,195	18,335	17,330	17,242	17,771	18,107	17,904	18,209	18,107	18,404	18,449	18,834
Unemployed	582	687	485	624	984	981	1,329	1,315	1,234	1,209	1,310	1,181	1,301	1,040	1,079	1,072	1,129	1,273	1,249
Unemployment Rate (Percent)	3.3	4.0	2.8	3.5	5.6	5.5	7.4	7.1	6.2	6.5	6.5	6.2	6.7	5.5	5.6	6.3	5.8	6.5	6.2
Anderson																			
Civilian Labor Force	3,056	3,160	3,315	3,425	3,396	3,440	3,418	3,388	3,299	3,271	3,092	3,044	3,034	3,022	3,194	3,182	3,371	3,245	3,263
Total Employed	2,947	3,034	3,214	3,302	3,222	3,244	3,153	3,092	3,022	3,022	2,866	2,800	2,800	2,800	2,800	2,800	2,800	2,800	2,800
Unemployed	109	126	101	123	174	196	265	296	277	249	326	314	314	314	314	314	314	314	314
Unemployment Rate (Percent)	3.6	4.0	3.0	3.5	5.1	5.7	7.8	8.7	7.2	8.0	7.9	7.1	6.8	4.9	6.0	6.7	6.4	7.9	7.2
Lim																			
Civilian Labor Force	4,216	4,338	3,799	3,967	3,991	4,209	4,319	4,426	3,708	3,838	3,637	3,668	3,774	3,496	3,351	3,242	3,301	3,245	3,363
Total Employed	4,593	4,186	3,698	3,877	3,772	3,974	4,038	4,102	3,376	3,509	3,286	3,357	3,455	3,238	3,083	2,924	3,014	2,921	3,027
Unemployed	133	152	101	150	219	235	281	324	332	329	351	311	319	258	268	288	287	324	337
Unemployment Rate (Percent)	2.8	3.9	2.7	3.8	5.5	5.6	6.5	7.3	9.0	8.6	9.7	8.5	8.5	7.4	8.0	8.9	8.7	10.0	10.0

Table D2
Unemployment Rates
Civilian Labor Force

Place	1995	1994
	August	August
Kansas	4.2	5.2
Anderson County	4.4	6.4
Barton County	4.7	6.6
Cowley County	5.9	6.0
Edwards County	3.9	4.5
Elk County	3.8	5.7
Labette County	5.5	7.8
Linn County	7.5	9.6
Miami County	2.8	4.5
Pawnee County	2.5	3.6
Shawnee County	4.6	5.0
Wyandotte County	6.2	9.0

Source: Kansas Department of Human Resources
 Compiled by CEDBR, WSU.

**Table D3. Resident Population (Includes Persons in Armed Forces)
Hospital Communities**

	1980 Census	1990 Census	July 1 1990	July 1 1991	July 1 1992	July 1 1993	July 1 1994
Kansas Neurological Institute, Agency 363							
Community Total (Shawnee County)	154,916	160,976	161,325	162,556	163,278	164,212	165,121
Larned State Hospital, Agency 410							
Community Total	43,679	40,724	40,585	40,492	40,594	40,335	40,174
Barton County	31,343	29,382	29,277	29,201	29,283	28,978	28,896
Edwards County	4,271	3,787	3,781	3,697	3,631	3,584	3,557
Pawnee County	8,065	7,555	7,527	7,594	7,680	7,773	7,721
Larned Youth Center, Agency 412							
Community Total	43,679	40,724	40,585	40,492	40,594	40,335	40,174
Barton	31,343	29,382	29,277	29,201	29,283	28,978	28,896
Edwards	4,271	3,787	3,781	3,697	3,631	3,584	3,557
Pawnee	8,065	7,555	7,527	7,594	7,680	7,773	7,721
Osawatomie State Hospital, Agency 494							
Community Total	38,601	39,523	39,591	39,955	40,349	40,535	41,198
Anderson County	8,749	7,803	7,777	7,760	7,871	7,874	7,905
Linn County	8,234	8,254	8,255	8,383	8,438	8,484	8,570
Miami County	21,618	23,466	23,559	23,812	24,040	24,177	24,723
Parsons State Hospital, Agency 507							
Community Total (Labette County)	25,682	23,693	23,615	23,569	23,502	23,241	23,148
Rainbow Mental Health Facility, Agency 555							
Community Total (Wyandotte County)	172,335	162,026	161,756	160,076	158,473	156,910	155,075
Topeka State Hospital, Agency 664							
Community Total (Shawnee County)	154,916	160,976	161,325	162,556	163,278	164,212	165,121
Winfield State Hospital, Agency 713							
Community Total	40,742	40,242	40,271	39,833	40,052	40,299	40,572
Cowley County	36,824	36,915	36,948	36,625	36,840	36,996	37,240
Elk County	3,918	3,327	3,323	3,208	3,212	3,303	3,332
Kansas State Total	2,364,236	2,477,588	2,480,558	2,491,659	2,517,791	2,535,097	2,554,047
United States	226,542,199	248,718,000	249,402,000	252,131,000	255,028,000	257,783,000	260,341,000

Source: U.S. Bureau of the Census
Compiled by CEDBR, Wichita State University

Table D4. Population Projections

	Hospital Communities								
	1990	1995	2000	2005	2010	2015	2020	2025	2030
Kansas Neurological Institute, Agency 363									
Community Total (Shawnee County)	160,976	167,777	169,632	171,672	171,010	171,506	170,952	169,640	166,809
Larned State Hospital, Agency 410									
Community Total	40,724	40,386	37,864	36,753	35,444	34,629	33,910	33,252	32,598
Barton County	29,382	29,616	27,857	27,161	26,281	25,772	25,414	25,093	24,751
Edwards	3,787	3,587	3,306	3,138	2,982	2,862	2,739	2,637	2,554
Pawnee	7,555	7,184	6,701	6,455	6,182	5,994	5,756	5,523	5,293
Larned Youth Center, Agency 412									
Community Total	40,724	40,386	37,864	36,753	35,444	34,629	33,910	33,252	32,598
Barton County	29,382	29,616	27,857	27,161	26,281	25,772	25,414	25,093	24,751
Edwards	3,787	3,587	3,306	3,138	2,982	2,862	2,739	2,637	2,554
Pawnee	7,555	7,184	6,701	6,455	6,182	5,994	5,756	5,523	5,293
Osawatomie State Hospital, Agency 494									
Community Total	39,523	41,014	41,769	42,650	43,512	44,459	45,313	46,012	46,572
Anderson	7,803	7,672	7,308	7,111	6,893	6,756	6,605	6,473	6,370
Linn	8,254	8,426	8,498	8,663	8,779	8,877	8,969	9,080	9,205
Miami	23,466	24,915	25,963	26,876	27,839	28,826	29,739	30,459	30,998
Parsons State Hospital, Agency 507									
Community Total (Labette)	23,693	23,771	23,059	22,893	22,637	22,591	22,572	22,642	22,785
Rainbow Mental Health Facility, Agency 555									
Community Total (Wyandotte Count	161,993	166,881	160,461	159,566	157,358	157,097	157,917	158,983	160,026
Topeka State Hospital, Agency 664									
Community Total (Shawnee County)	160,976	167,777	169,632	171,672	171,010	171,506	170,952	169,640	166,809
Winfield State Hospital, Agency 713									
Community Total	40,242	40,899	40,634	40,727	40,467	40,461	40,209	39,855	39,332
Cowley	36,915	37,704	37,644	37,880	37,774	37,886	37,748	37,480	37,019
Elk	3,327	3,195	2,990	2,847	2,692	2,575	2,462	2,375	2,313
Kansas State Total	2,477,574	2,526,619	2,562,890	2,604,664	2,645,887	2,688,165	2,723,689	2,754,617	2,780,613
United States (in thousands)*	248,718	263,434	276,241	288,286	300,431	313,116	325,942	338,338	349,993

Source: State of Kansas, Division of the Budget

*U.S. Bureau of the Census, Current Population Reports, P25-1104, Middle Series

Compiled by CEDBR, Wichita State University

Table DS. Educational Attainment Persons 25 Years and Over
Hospital Communities

	Less Than 9th Grade	9th to 12th Grade, No Diploma	High School Graduate Includes Equivalency	Some College, No Degree	Associate Degree	Bachelor's Degree	Graduate or Professional Degree	Percent High School Graduates
Kansas Neurological Institute, Agency 363								
Community Total (Shawnee County)	5,989	10,352	37,830	23,649	3,575	15,595	7,805	84.4%
Larned State Hospital, Agency 410								
Community Total	2,729	3,029	8,875	6,674	1,776	2,715	1,088	78.6%
Barton County	1,948	2,264	6,186	4,800	1,321	1,863	739	78.0%
Edwards County	362	266	975	567	131	266	82	76.3%
Pawnee County	419	499	1,714	1,307	324	586	267	82.1%
Larned Youth Center, Agency 412								
Community Total	2,729	3,029	8,875	6,674	1,776	2,715	1,088	78.6%
Barton County	1,948	2,264	6,186	4,800	1,321	1,863	739	78.0%
Edwards County	362	266	975	567	131	266	82	76.3%
Pawnee County	419	499	1,714	1,307	324	586	267	82.1%
Osawatimie State Hospital, Agency 494								
Community Total	3,082	3,185	10,673	4,586	1,411	1,970	1,027	75.8%
Anderson County	955	592	2,099	847	282	260	161	70.2%
Linn County	809	652	2,382	914	238	415	164	73.9%
Miami County	1,318	1,941	6,192	2,825	871	1,295	702	78.5%
Parsons State Hospital, Agency 507								
Community Total (Labette County)	1,841	2,125	4,965	3,448	1,109	1,039	820	74.2%
Rainbow Mental Health Facility, Agency 555								
Community Total (Wyandotte County)	11,056	19,232	36,022	18,598	5,223	6,726	3,676	69.9%
Topeka State Hospital, Agency 664								
Community Total (Shawnee County)	5,989	10,352	37,830	23,649	3,575	15,595	7,805	84.4%
Winfield State Hospital, Agency 713								
Community Total	2,856	3,440	8,438	6,041	1,669	2,534	1,280	76.0%
Cowley County	2,431	3,073	7,565	5,616	1,591	2,359	1,202	76.9%
Elk County	425	367	873	425	78	175	78	67.3%
Kansas								
Community Total	120,951	172,321	514,177	342,964	85,146	221,016	109,361	81.3%
United States								
Community Total	16,502,211	22,841,507	47,642,763	29,779,777	9,791,925	20,832,567	11,477,686	75.2%

Source: U.S. Bureau of the Census
Compiled by CEDBR, Wichita State University

Table D6.
Occupation Employed Persons 16 Years and Over
Hospital Communities

	Kansas Neurological Institute Community Total		Larned State Hospital Community Total					Larned Youth Center Community Total				
			Barton	Edwards	Pawnee		Barton	Edwards	Pawnee			
Managerial and professional specialty occupations	10,312	1,722	1,335	124	263	1,722	1,335	124	263			
Executive, administrative, and managerial occupations	12,149	2,146	1,471	189	486	2,146	1,471	189	486			
Professional specialty occupations	3,494	494	340	25	129	494	340	25	129			
Technical, sales, and administrative support occupations	8,472	2,062	1,677	142	243	2,062	1,677	142	243			
Technicians and related support occupations	16,854	2,926	2,287	194	445	2,926	2,287	194	445			
Administrative support occupations, including clerical	170	67	36	18	13	67	36	18	13			
Service occupations	1,543	275	203	7	65	275	203	7	65			
Private household occupations	9,637	2,582	1,715	213	654	2,582	1,715	213	654			
Protective service occupations, except protective and household	832	1,620	759	403	458	1,620	759	403	458			
Farming, forestry, and fishing occupations	6,932	2,578	2,043	195	340	2,578	2,043	195	340			
Precision production, craft, and repair occupations	4,441	869	744	68	57	869	744	68	57			
Operators, fabricators, and laborers	2,610	1,156	916	78	162	1,156	916	78	162			
Machine operators, assemblers, and inspectors	2,697	632	475	58	99	632	475	58	99			
Transportation and material moving occupations												
Handlers, equipment cleaners, helpers, and laborers												

Source: 1990 Census of Population and Housing
 Compiled by CEDBR, Wichita State University

Table D6.
Occupation Employed Persons 16 Years and Over
Hospital Communities

	Oswatimie State Hospital Community Total	Anderson Linn	Miami	Parsons State Hospital Community Total	Rainbow Mental Health Facility Community Total	Topelka State Hospital Community Total
Managerial and professional specialty occupations	1,218	185	179	930	5,570	10,312
Executive, administrative, and managerial occupations	1,895	283	346	1,206	6,346	12,149
Professional specialty occupations	567	74	121	458	2,347	3,494
Technical, sales, and administrative support occupations	1,471	328	199	937	6,536	8,472
Technicians and related support occupations	2,595	475	388	1,346	14,745	16,854
sales occupations	30	9	6	22	239	170
administrative support occupations, including clerical	230	61	30	94	1,615	1,543
Service occupations	2,198	438	416	1,441	9,045	9,637
Private household occupations	1,460	557	257	475	726	832
Protective service occupations	2,698	364	576	1,160	8,184	6,932
Services occupations, except protective and household	1,351	334	184	1,341	6,351	4,441
Farming, forestry, and fishing occupations	1,020	136	166	611	4,176	2,610
Precision production, craft, and repair occupations	815	165	178	400	4,463	2,697
Operators, fabricators, and laborers						
Machine operators, assemblers, and inspectors						
Transportation and material moving occupations						
Handlers, equipment cleaners, helpers, and laborers						

Source: 1990 Census of Population and Housing
Compiled by CEDER, Wichita State University

Table D6.
Occupation Employed Persons 16 Years and Over
Hospital Communities

	Winfield State Hospital Community Total	Cowley	Elk	Kansas	United States
Managerial and professional specialty occupations	1,440	1,332	108	132,736	14,227,916
Executive, administrative, and managerial occupations	2,104	1,973	131	164,867	16,305,666
Professional specialty occupations	577	549	28	39,255	4,257,235
Technical, sales, and administrative support occupations	1,579	1,490	89	133,978	13,634,686
Technicians and related support occupations	2,274	2,122	152	188,610	18,826,477
sales occupations	57	55	2	4,129	521,154
administrative support occupations, including clerical	246	216	30	15,991	1,992,852
Service occupations	2,762	2,560	202	137,680	12,781,911
Private household occupations	926	697	229	54,139	2,839,010
Protective service occupations	2,639	2,471	168	134,400	13,097,963
Services occupations, except protective and household	1,573	1,507	66	73,246	7,904,197
Farming, forestry, and fishing occupations	830	729	101	48,001	4,729,001
Precision production, craft, and repair occupations	823	775	48	45,182	4,563,134
Operators, fabricators, and laborers					
Machine operators, assemblers, and inspectors					
Transportation and material moving occupations					
Handlers, equipment cleaners, helpers, and laborers					

Source: 1990 Census of Population and Housing
 Compiled by CEDBR, Wichita State University

Table D7. Population by Age, 1990
Hospital Communities

	Less Than 5 Years	5 to 9 Years	10 to 14 Years	15 to 19 Years	20 to 24 Years	25 to 29 Years	30 to 34 Years	35 to 39 Years	40 to 44 Years	45 to 49 Years	50 to 54 Years	55 to 59 Years	60 to 64 Years	65 to 69 Years	70 to 74 Years	75 to 79 Years	80 to 84 Years	85 Plus Years	
Kansas Neurological Institute, Agency 363																			
Community Total (Shawnee County)	11,670	12,210	11,371	10,514	10,742	13,315	13,974	13,383	11,596	9,005	7,419	7,321	7,271	6,671	4,982	3,969	2,969	2,494	
Larned State Hospital, Agency 410																			
Community Total	2,905	3,301	3,027	2,618	2,016	2,843	3,271	3,064	2,421	2,032	1,938	2,055	1,988	2,028	1,874	1,416	1,072	855	
Barton	2,231	2,455	2,169	1,856	1,566	2,111	2,423	2,215	1,726	1,442	1,348	1,471	1,455	1,442	1,226	981	699	565	
Edwards	222	292	298	197	138	241	293	241	203	180	206	189	201	199	231	139	146	131	
Pawnee	452	553	560	565	312	491	555	608	492	410	384	395	352	387	397	276	227	159	
Larried Youth Center, Agency 412																			
Community Total	2,905	3,301	3,027	2,618	2,016	2,843	3,271	3,064	2,421	2,032	1,938	2,055	1,988	2,028	1,874	1,416	1,072	855	
Barton County	2,231	2,455	2,169	1,856	1,566	2,111	2,423	2,215	1,726	1,442	1,348	1,471	1,455	1,442	1,226	981	699	565	
Edwards	222	292	298	197	138	241	293	241	203	180	206	189	201	199	231	139	146	131	
Pawnee	452	553	560	565	312	491	555	608	492	410	384	395	352	387	397	276	227	159	
Osweston State Hospital, Agency 484																			
Community Total	2,720	3,162	3,050	2,706	1,962	2,778	2,903	2,856	2,566	2,327	1,911	1,893	1,918	1,875	1,585	1,386	1,002	923	
Anderson	518	613	580	522	374	502	497	479	449	418	370	359	404	438	391	365	255	249	
Linn	519	625	624	529	363	512	492	535	484	444	400	435	484	524	438	341	256	269	
Miami	1,683	1,924	1,846	1,655	1,225	1,764	1,914	1,842	1,633	1,465	1,141	1,099	1,030	893	756	680	511	405	
Parsons State Hospital, Agency 507																			
Community Total (Labette)	1,698	1,839	1,733	1,752	1,388	1,731	1,708	1,569	1,547	1,263	996	997	1,101	1,138	1,083	935	667	548	
Rainbow Mental Health Facility, Agency 555																			
Community Total (Wyandotte Count)	13,462	13,694	12,993	11,360	11,466	14,341	13,954	12,024	9,909	8,014	6,798	6,873	7,061	6,690	5,345	4,092	2,679	2,228	
Topeka State Hospital, Agency 664																			
Community Total (Shawnee County)	11,670	12,210	11,371	10,514	10,742	13,315	13,974	13,383	11,596	9,005	7,419	7,321	7,271	6,671	4,982	3,969	2,969	2,494	
Winfield State Hospital, Agency 713																			
Community Total	2,791	3,049	3,006	2,849	2,391	2,803	2,946	2,902	2,559	2,154	1,945	1,894	1,845	1,820	1,657	1,512	1,065	934	
Cowley	2,594	2,855	2,802	2,673	2,256	2,632	2,785	2,722	2,384	1,978	1,760	1,711	1,743	1,592	1,427	1,295	899	807	
Elk	197	194	204	176	135	171	161	180	175	176	185	183	202	228	230	217	166	147	
Kansas	188,390	195,981	179,473	172,176	180,087	201,424	211,769	195,812	165,514	128,598	106,790	103,821	105,188	101,421	83,243	67,620	48,046	42,241	
United States	18,354,443	18,099,179	17,114,249	17,754,015	19,020,312	21,313,045	21,862,887	19,563,117	17,615,786	13,872,573	11,350,513	10,531,756	10,616,167	10,111,735	7,994,823	6,171,369	3,933,739	3,080,165	

Source: 1990 Census of Population and Housing
Compiled by CEDSR, Wichita State University

Table D8. Population by Race, 1990
Hospital Communities

	White	Black	Am. Indian Eskimo, Aleut	Asian or Pacific Isl.	Hispanic Origin	Other Race	Non-White Population % of Total
Kansas Neurological Institute, Agency 363							
Community Total (Shawnee County)	137,250	13,058	1,660	1,103	7,785	120	14.7
Larned State Hospital, Agency 410							
Community Total	38,515	578	170	165	1,269	27	5.4
Barton County	27,973	341	132	101	816	19	4.8
Edwards County	3,566	4	12	8	197	0	5.8
Pawnee County	6,976	233	26	56	256	8	7.7
Larned Youth Center, Agency 412							
Community Total	38,515	578	170	165	1,269	27	5.4
Barton	27,973	341	132	101	816	19	4.8
Edwards	3,566	4	12	8	197	0	5.8
Pawnee	6,976	233	26	56	256	8	7.7
Osawatimie State Hospital, Agency 494							
Community Total	38,242	636	236	43	361	5	3.2
Anderson County	7,645	37	64	6	51	0	2.0
Lin County	8,133	37	44	6	34	0	1.5
Miami County	22,464	562	128	31	276	5	4.3
Parsons State Hospital, Agency 507							
Community Total (Labette County)	21,654	1,025	405	92	516	1	8.6
Rainbow Mental Health Facility, Agency 555							
Community Total (Wyandotte County)	103,955	44,131	966	1,787	10,997	157	35.8
Topeka State Hospital, Agency 664							
Community Total (Shawnee County)	137,250	13,058	1,660	1,103	7,785	120	14.7
Winfield State Hospital, Agency 713							
Community Total	36,994	1,045	707	318	1,156	22	8.1
Cowley County	33,789	1,040	656	315	1,097	18	8.5
Elk County	3,205	5	51	3	59	4	3.7
Kansas State Total	2,190,524	140,761	20,363	30,814	93,670	1,442	11.6
United States	188,128,296	29,216,293	1,793,773	6,968,359	22,354,059	249,093	24.4

Source: 1990 Census of Population and Housing
Compiled by CEDBR, WSU

Appendix E
Supplemental Tables

The Hospital Closure Commission requested additional information on the economic impact of closure during the October 10, 1995 hearing. The commission wanted to see both the share and absolute values of property tax and sales tax impacts as well as total employed as a percentage of total population. These additional tables which were presented at the October 25, 1995 hearing follow.

Table E1. Summary of Economic Impact of Hospital Closure
Scenario 1*

Agency	Impact on Income		Impact on Income Share of Total		Impact on Employment		Impact on Employment Share of Total		Impact on Sales Tax Revenues		Impact on Property Taxes		Total Employed 1994 Census Bureau Estimate**	Total Population 1994 Census Bureau Estimate	Total Employed as a Percentage of Total Population***
	Absolute Values	Total	Direct	Total	Direct	Total	Direct	Total	Absolute Change	Share of Total	Absolute Change	Share of Total			
Kansas Neurological Institute, Agency 343															
Community Total	\$18,529,806	\$27,742,295	0.6%	0.8%	688	1,006	0.8%	1.3%	\$137,925	0.8%	\$591,179	0.6%	84,722	165,121	51.3%
Shawnee	\$18,529,806	\$27,742,295	0.6%	0.8%	688	1,006	0.8%	1.3%	\$137,925	0.8%	\$591,179	0.6%	84,722	165,121	51.3%
Larned State Hospital, Agency 410															
Community Total	\$24,017,824	\$31,419,977	3.1%	4.0%	773	1,228	3.9%	6.1%	\$99,144	2.5%	\$667,147	2.8%	19,988	40,174	49.8%
Paymore	\$20,540,174	\$26,635,329	12.8%	16.6%	634	1,037	17.7%	28.1%	\$73,792	13.8%	\$568,825	11.4%	3,686	7,721	47.7%
Barton	\$2,962,652	\$4,122,079	0.6%	0.8%	101	167	0.6%	1.2%	\$24,177	0.7%	\$87,869	0.6%	14,496	28,996	50.2%
Edwards	\$514,998	\$602,589	0.6%	0.7%	18	23	1.0%	1.3%	\$1,175	0.7%	\$10,462	0.3%	1,806	3,557	50.8%
Larned Youth Center, Agency 412															
Community Total	\$2,796,166	\$3,416,332	0.4%	0.4%	110	146	0.6%	0.7%	\$12,464	0.3%	\$68,426	0.3%	19,988	40,174	49.8%
Paymore	\$2,054,884	\$2,442,228	1.3%	1.5%	80	103	2.2%	2.8%	\$6,751	1.4%	\$48,346	1.0%	3,686	7,721	47.7%
Barton	\$711,282	\$974,088	0.1%	0.2%	30	43	0.2%	0.3%	\$5,713	0.2%	\$30,080	0.1%	14,496	28,996	50.2%
Edwards	\$0	\$0	0.0%	0.0%	0	0	0.0%	0.0%	\$0	0.0%	\$0	0.0%	1,806	3,557	50.8%
Both Larned Agencies															
Community Total	\$26,813,990	\$34,836,329	3.5%	4.5%	883	1,373	4.4%	6.9%	\$111,608	2.9%	\$735,572	3.1%	19,988	40,174	49.8%
Paymore	\$22,595,038	\$29,137,654	14.1%	18.2%	734	1,140	19.2%	30.9%	\$89,543	17.2%	\$617,171	12.3%	3,686	7,721	47.7%
Barton	\$3,703,934	\$5,096,087	0.7%	1.0%	131	210	0.9%	1.5%	\$29,890	0.9%	\$107,940	0.7%	14,496	28,996	50.2%
Edwards	\$514,998	\$602,589	0.6%	0.7%	18	23	1.0%	1.3%	\$1,175	0.7%	\$10,462	0.3%	1,806	3,557	50.8%
Oswatimie State Hospital, Agency 494															
Community Total	\$13,747,523	\$16,411,339	2.1%	2.8%	455	618	2.4%	3.3%	\$73,717	2.7%	\$263,965	1.3%	18,834	41,198	45.7%
Miami	\$11,227,757	\$13,487,726	2.7%	3.3%	375	513	3.1%	4.3%	\$68,292	3.1%	\$201,960	2.0%	12,044	24,723	48.7%
Linn	\$1,571,388	\$1,533,660	1.1%	1.3%	48	57	1.6%	1.2%	\$562	1.2%	\$18,724	0.7%	3,025	8,570	35.3%
Anderson	\$1,138,378	\$1,370,533	1.0%	1.2%	32	48	0.9%	1.3%	\$4,862	1.1%	\$23,281	0.7%	3,764	7,903	47.6%
Parsons State Hospital, Agency 507															
Community Total	\$12,980,048	\$15,551,978	3.6%	4.3%	447	600	4.6%	6.1%	\$90,554	4.1%	\$285,528	3.9%	9,765	23,148	42.2%
Labette	\$12,980,048	\$15,551,978	3.6%	4.3%	447	600	4.6%	6.1%	\$90,554	4.1%	\$285,528	3.9%	9,765	23,148	42.2%
Rainbow Mental Health Facility, Agency 555															
Community Total	\$1,956,927	\$2,602,249	0.1%	0.1%	87	130	0.1%	0.2%	\$24,542	0.1%	\$73,699	0.1%	73,160	153,075	47.2%
Wyandotte	\$1,956,927	\$2,602,249	0.1%	0.1%	87	130	0.1%	0.2%	\$24,542	0.1%	\$73,699	0.1%	73,160	153,075	47.2%
Topeda State Hospital, Agency 664															
Community Total	\$14,708,814	\$23,732,081	0.4%	0.7%	456	870	0.3%	1.0%	\$117,985	0.7%	\$567,320	0.3%	84,722	165,121	51.3%
Shawnee	\$14,708,814	\$23,732,081	0.4%	0.7%	456	870	0.3%	1.0%	\$117,985	0.7%	\$567,320	0.3%	84,722	165,121	51.3%
Both Topeda Agencies															
Community Total	\$33,238,620	\$51,475,077	1.0%	1.5%	1,144	1,966	1.4%	2.3%	\$255,909	1.5%	\$1,158,499	1.1%	84,722	165,121	51.3%
Shawnee	\$33,238,620	\$51,475,077	1.0%	1.5%	1,144	1,966	1.4%	2.3%	\$255,909	1.5%	\$1,158,499	1.1%	84,722	165,121	51.3%
Winfield State Hospital, Agency 713															
Community Total	\$19,840,915	\$23,783,219	3.0%	3.6%	705	910	3.9%	5.0%	\$84,530	3.4%	\$417,549	2.0%	18,218	40,572	44.9%
County	\$19,840,915	\$23,783,219	3.0%	3.6%	705	910	3.9%	5.0%	\$84,530	3.4%	\$417,549	2.0%	18,218	40,572	44.9%
DK	\$287,752	\$332,028	0.6%	0.6%	14	17	1.1%	1.3%	\$993	0.6%	\$5,861	0.3%	1,300	3,332	39.0%

*Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).
 **Total employed residents Civilian Labor Force data 1994, KDHHR. Used as a measure of prospects for re-employment.
 ***Comparisons of total population and total employment are limited by the fact that total population does NOT take into account the differences in age distributions among counties. For example, if a county has a larger percentage of the population 65 years and over, all else equal, the county will tend to have a lower percentage of the population employed than a county with a smaller percentage of the population 65 years and over.
 Source: PPRR, University of Kansas and CDBHR, Wichita State University
 Compiled by CDBHR, Wichita State University

Table E2. Ranking of Economic Impact of Hospital Closure by Indicator

Scenario 1*
(Number 1 indicates the largest impact)

Agency	Impact on Income		Impact on Employment		Impact on Sales Tax Revenues		Impact on Property Taxes		Total Employed Residents**	Total Population 1994 Census Bureau Estimate	Total Employed as a Percentage of Total Population****
	Absolute Values	Share of Total	Absolute Values	Share of Total	Absolute Change	Share of Total	Absolute Change	Share of Total			
Community Totals											
Both Larned Agencies	2	2	2	2	4	3	2	2	4	2	5
Both Topka Agencies	1	1	1	1	1	6	1	1	7	7	7
Kansas Neurological Institute, Agency 363	4	6	5	6	2	7	4	4	7	7	7
Larned State Hospital, Agency 410	3	3	3	4	5	5	3	3	4	2	5
Oswawatomie State Hospital, Agency 494	7	5	7	5	8	4	8	3	3	5	3
Parsons State Hospital, Agency 507	8	8	8	8	6	1	7	1	1	1	1
Rainbow Mental Health Agency, Agency 555	9	9	9	9	9	9	9	9	6	6	4
Topka State Hospital, Agency 664	6	6	6	8	3	8	5	5	7	7	7
Winfield State Hospital, Agency 713	4	4	4	4	7	2	6	4	2	4	2
County Where Hospital is Located											
Cowley (WSH)	4	6	4	4	3	4	4	6	5	4	2
Labette (PSH)	7	7	7	3	7	3	7	7	3	3	1
Miami (OSH)	8	8	8	5	8	5	8	8	4	4	6
Pawnee (Both Larned Agencies)	2	2	2	1	2	1	2	2	1	1	4
Pawnee (LSH)	3	4	4	2	5	2	4	4	2	2	4
Shawnee (Both Topka Agencies)	1	1	1	6	1	6	1	1	7	7	7
Shawnee (KSH)	5	3	5	7	4	7	3	3	7	7	7
Shawnee (TSH)	6	5	6	8	6	8	5	5	7	7	7
Wyandotte (RMAHR)	9	9	9	9	9	9	9	9	6	6	3

*Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).
 **Total employed residents Civilian Labor Force data 1994, KIDHR. Used as a measure of prospects for re-employment.
 ***Comparisons of total population and total employment are limited by the fact that total population does NOT take into account the differences in age distributions among counties. For example, if a county has a large percentage of the population 65 years and over, all else equal, the county will tend to have a lower percentage of the population employed than a county with a smaller percentage of the population 65 years and over. To be able to adjust for this we would be limited to using 1990 census counts. The more current census estimate is preferred.
 Source: IPPBR, University of Kansas and CEDBR, Wichita State University
 Compiled by CEDBR, Wichita State University

Table E3. Overall Economic Impact of Hospital Closure
Assuming All Indicators Have Equal Weight
Scenario 1*
(Number 1 indicates the largest impact)

Community Totals		Ranking	
Both Larned Agencies		1	
Larned State Hospital, Agency 410		2	
Parsons State Hospital, Agency 507		3	
Winfield State Hospital, Agency 713		4	
Both Topeka Agencies		5	
Osawatimie State Hospital, Agency 494		6	
Kansas Neurological Institute, Agency 363		7	
Topeka State Hospital, Agency 664		8	
Rainbow Mental Health Facility, Agency 555		9	
County Where Hospital is Located		Ranking	
Pawnee (Both Larned Agencies)		1	
Pawnee (LSH)		2	
Shawnee (Both Topeka Agencies)		3	
Labette (PSH)		4	
Cowley (WSH)		5	
Shawnee (KNI)		6	
Miami (OSH)		7	
Shawnee (TSH)		8	
Wyandotte (RM/HF)		9	

* Assumes a percentage of persons commute to work outside their county of residence (percentages based on 1990 census data).

Source: IPPBR, University of Kansas and CEDBR, Wichita State University
 Compiled by CEDBR, Wichita State University