

PURPOSE OF RESEARCH PROJECT

The purpose of this project is to determine how the mix of the local employment base has changed over time. Areas examined include: the importance of the role of the University in the Lawrence/Douglas County economy, and if growth in other categories, such as Manufacturing, have provided an increase in economic diversity.

In addition, there is concern about the relationships in patterns of growth of population and overall employment and changes in commuting patterns.

SUMMARY OF FINDINGS

The University influence remains strong in the Lawrence/Douglas County economy. However, the size of University's slice of the "economic driver" pie has decreased over the past 20 years, while the Manufacturing category has grown slightly.

- ▶ The University continues to be the major employer in Lawrence.
- ▶ University employment, although increasing in size by 25% over 20 years, has declined as a percentage of the whole of the categories defined as "drivers" from 54.9% to 47.7%.
- ▶ Manufacturing has enjoyed a gain in employees of 56%, and has increased its proportion to the whole of economic drivers from 29.3% to 31.8% since 1974.
- ▶ Finance, Insurance and Real Estate has posted the largest increase in this measure of proportions, jumping from 5.3% to 9.4% of the driver's whole.
- ▶ Non-driver employment categories, such as Service and Retail have increased at significantly higher rates:

Service	329%
Retail	124%
- ▶ Over the period of time between 1974 and 1994, the following increases were recorded:

Population:	40%.
Taxable Sales:	64% (corrected for inflation)
Total Employment:	84% (REIS Data)
Total Employment:	129% (CBP Data) (excludes government)
- ▶ The number of workers living in Douglas County and working elsewhere has increased by over 100% in the 10 years between 1980 and 1990, and continues to grow. Commuter data for the years in between the censuses are not available.
- ▶ Over the years from 1990 through 1996, there appears to be NO correlation between changes in population and changes in a number of measures of employment.
- ▶ During the 1990s, jobs and workers increased at a faster rate than population.

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METHOD

This report examines different measures of economic activity, including population growth, taxable sales growth, and the types of employment available in Douglas County over a period of years, as a means of measuring changing levels of influence among the various industries. Three primary data sources were employed in this analysis: County Business Patterns (CBP) and the Regional Economic Information System (REIS), and the Kansas Department of Human Resources (KDHR). Both CBP and REIS operate under the auspices of the U.S. Department of Commerce, with CBP under the Bureau of the Census and REIS under the Bureau of Economic Analysis.

University and school district employees are included in the category of “government” employees. CBP figures exclude, by definition, the following groups:

- 1) government employees,
- 2) the self-employed,
- 3) unpaid members in a family business, and
- 4) elected officials.

REIS figures make estimates that try to account for these categories. Although there are differences between the numbers from the two sources due to these differences in data inclusion, the basic trends they portray are the same and comparable over time. Because of the differences in the methods of data collection used by the two agencies, the absolute figure will not be stressed, but the comparisons of changes within categories from each source will be closely examined.

In order to satisfy different opinions regarding the historical point for comparison, a range of 20 years, starting with 1974 and including 1994 is presented. This is the latest year that full data is available from the two sources. Use of graphics and tables will allow the reader to choose a personal period of significance in making inferences. Five year blocks are utilized in some cases, but annual data is used where it enhances the clarity of information.

DATA SOURCE DEFINITIONS AND CLARIFICATIONS

CBP: County Business Patterns, U. S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census. Excludes Government employees, railroad employees and the self-employed. Data is "Place of Work."

REIS: The Regional Economic Information System, data for 1994 came out in June 1996. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of Economic Analysis, Regional Economic Measurement Division. These figures represent the number of jobs, not the number of people employed. So one person could have two or more of the jobs. It includes estimates for the other groups excluded from CBP data, such as the self-employed. The self-employed probably make up a larger share of service jobs than manufacturing jobs. The data is "Place of Work."

KDHR: Kansas Department of Human Resources publishes their own Labor Market Summaries, and provides data to the Bureau of Labor Statistics and the Bureau of Economic Analysis.

KDOR: Kansas Department of Revenue, which reports the amount of state sales taxes collected by each county. The figures used here are in process month format, which means that they are shown in the month the returns are processed by the data entry people. This could be 1, 2 or 3+ months after the month when the taxes were generated, but for a long term look, it is not a problem.

KU-OIRP: Kansas University Office of Institutional Research and Planning. Provided historical figures on university employment.

CONFOUNDING VARIABLES

Changes in Demographics

It is necessary to keep in mind the changes in the makeup of the workforce. In the last 20 years, the number of workers per household has increased. Specifically, more spouses have entered the workforce. This would explain part of why employment has increased at a significantly higher rate than population.

Changes in Transportation Corridors (K-10)

Highway K-10 was completed through to I-435 in March of 1984. This sudden easing of the ability to commute could be responsible for changes in work patterns. It is interesting to note, in both the CBP and REIS figures, that Service sector jobs increased significantly after the highway was completed.

DEFINING AN ECONOMIC DRIVER

The question of what's driving the economy is a tricky one to answer. The biggest issue is, what constitutes a "driver?" It revolves around the position taken by economists that an economic driver is something that brings money into the area from somewhere else. The size of the area you are investigating becomes very important. If you are looking at the State of Kansas, then businesses that only shift funds around within Kansas would not be counted as driving the state economy.

Since we are looking only at the Lawrence/Douglas County area, we can adjust our outlook. For example, a manufacturing industry drives the local economy because it sells most of its products outside of the immediate area. Construction drives the economy because people move here from elsewhere to buy the properties. The University drives the economy because the majority of students are from outside of the neighborhood. All of these bring dollars into the local area from somewhere else.

A manufacturing industry helps drive the state economy when it sells outside of the state. But consider this example: An aircraft parts manufacturer in Wichita, supplying parts to Boeing, is not driving the economy. Boeing is driving the economy. Breaking these distinctions down into that fine a point is beyond the scope of this report. For the sake of simplicity, we will consider all manufacturing to be an economic driver, along with all construction, all government, all farm, agriculture and land related, and all finance, insurance and real estate, even though there are good arguments on the opposing side for each.

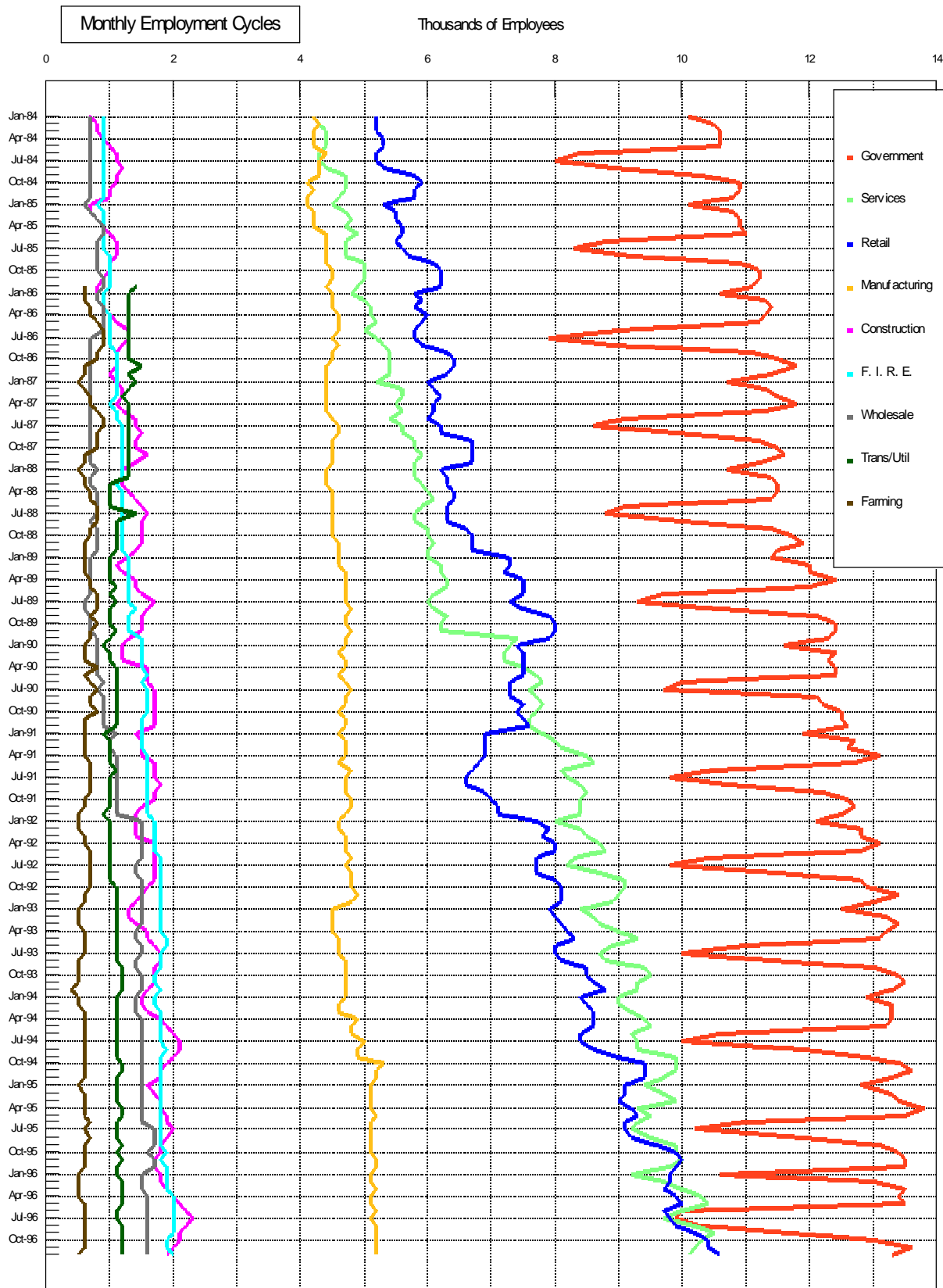
Service and retail categories, on the other hand, get their life locally. Money earned comes from the local area residents. In general, the service and retail jobs have been created as a result of driver industries. So even though a majority of the economy is made up of service and retail jobs, they don't drive the economy, they merely follow it. If the drivers were removed, the rest would collapse. So in the same way we defined drivers, we will define all service, retail, wholesale, transportation and public utility categories as non-drivers for purposes of this analysis.

KDHR MONTHLY EMPLOYMENT CYCLES

On the following page, a large graph of the monthly employment figures for each major employment category is posted. This is the same graph that was included in the 1996 Annual Performance of the Economy Report, but covers a longer span of time. Viewing data like this in a context of a long time line provides an better appreciation of the changes that have, or have not, occurred.

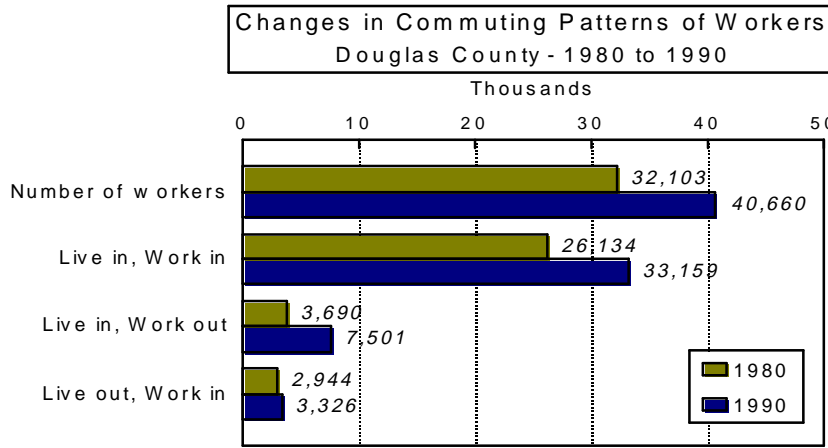
As reported previously, the dip in the government graph seems to correlate closely with the number of student employees at the University and the times they are likely not to be working.

KDHR MONTHLY EMPLOYMENT HISTORY GRAPH



COMMUTING PATTERNS

Data was gathered from two sources: the 1990 Census of Population and Housing: Twenty Place of Work Destinations for Counties, and the 1980 Census Journey to Work: Metropolitan Commuting Flows. Both are from the U.S. Bureau of the Census.



Notice that within the decade measured, the number of workers that live and work in Douglas County has increased in almost identical proportion to the total number of workers, almost 27%. There has been a large increase (over 100%) in the number of workers who live in Douglas County and work elsewhere.

U.S. Bureau of the Census

The figures for workers who live elsewhere and work inside Douglas County are a bit low, since data could not be found for Leavenworth or Wyandotte Counties. Over 1,100 workers who commuted out of Leavenworth, and 865 from Wyandotte, were not classified as to destination in our 1990 source. It is felt that of these two, the number of commuters coming here from Leavenworth county could be significant.

Douglas County Workers	1980	1990	% Change
Total Number who Live In DG	32,103	40,660	26.7%
Number who Live In & Work In DG	26,134	33,159	26.9%
Number who Live In & Work Outside DG	3,690	7,501	103.3%
Number who Live Outside & Work In DG	2,944	3,326	13.0%

If the numbers of those living elsewhere and working here were increased by the rough guess of 400, the resulting percentage would fall within the same ballpark as the first two categories on this table (about 27%). This would leave highlighted the third category, where many more workers who live in Douglas County are commuting elsewhere. This category has more than doubled in size in the 10 year period. The data indicate that in 1980, of the 3,690 workers identified as working out of our county, 31% went to Topeka and 26% went to Johnson County.

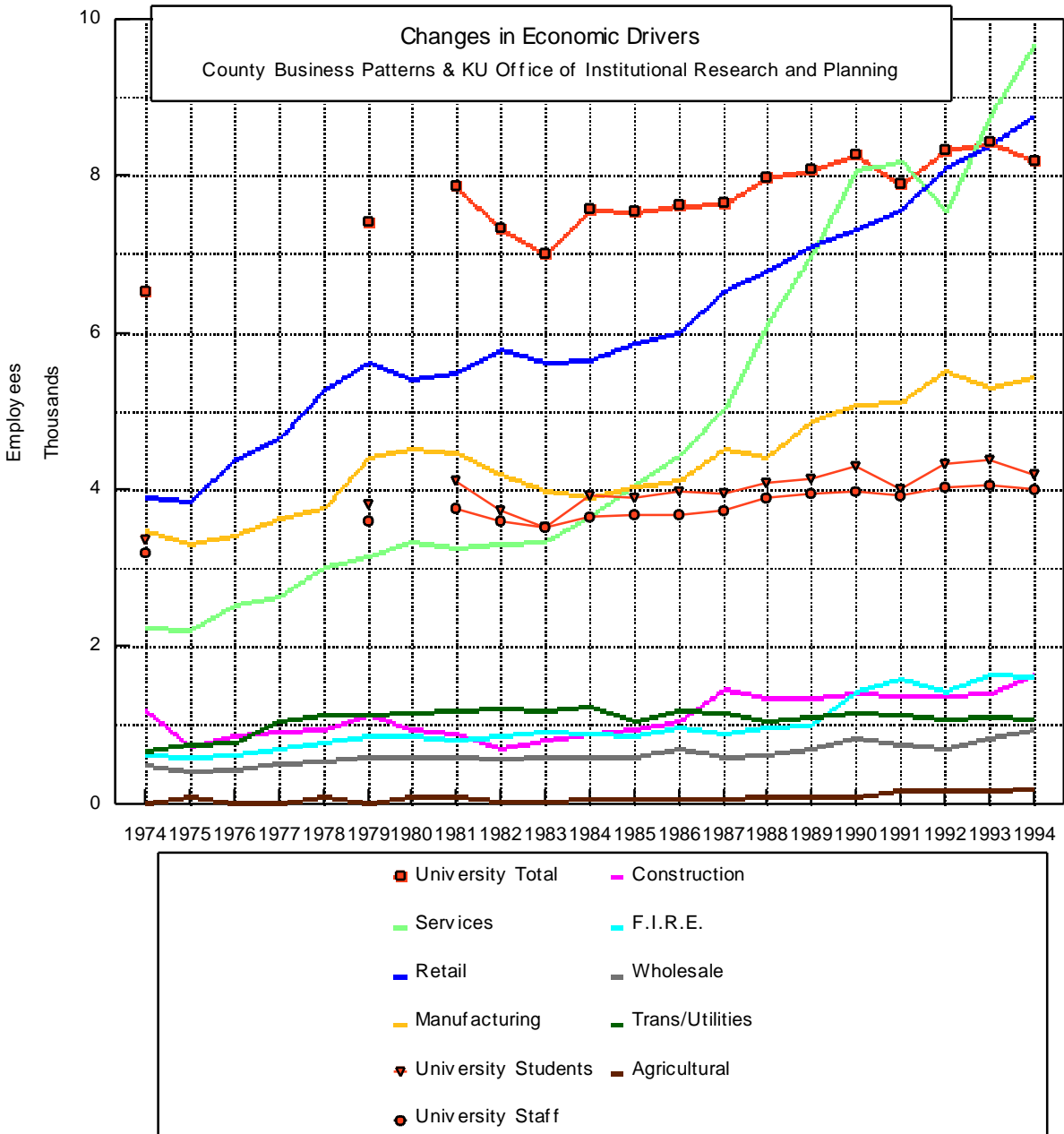
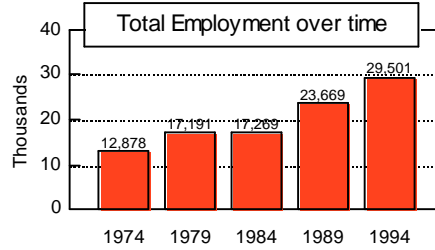
Destinations of Workers who Commute Outside of Douglas County

	1980	% of total	1990	% of total	% Change
Franklin	161	4.4%	208	2.8%	29.2%
Jefferson	119	3.2%	214	2.9%	79.8%
Johnson	951	25.8%	2,717	36.2%	185.7%
Leavenworth	136	3.7%	303	4.0%	122.8%
Shawnee	1,152	31.2%	2,226	29.7%	93.2%
Wyandotte	441	12.0%	480	6.4%	8.8%
Other KS	233	6.3%	?		
Missouri	419	11.4%	1,008	13.4%	140.6%
Elsewhere	78	2.1%	345	4.6%	
Total	3,690	100.0%	7,501	100.0%	103.3%

By 1990, there had been a shift to the east, with, out of 7,501 workers commuting outside Douglas County, 30% going to Topeka and 36% traveling to Johnson County.

COUNTY BUSINESS PATTERN (CBP) DATA

This data comes from Bureau of the Census and differs from the employment graph from KDHR, used in the Annual Performance of the Economy Report, in the following ways: it excludes government employees, railroad employees and the self-employed. This is “place of work” data. The graph to the right shows the levels of total employment, over the past 20 years. The graph below shows annual details by category.



To examine the specific employment categories in more detail, it was necessary to gather information from the University regarding faculty/staff and student employment, since CBP does not include them. They have been added to this line graph above in order to show changes within employment categories. Even from the limited number of data points available, it is evident that University faculty/staff and student employment has not increased significantly. Data on student employment prior to 1981 is not available, but is likely to have been equally stable. Calculated averages in proportion to faculty/admin employment were used as estimates for the years 1974 and 1979. The figures used for faculty/admin for those two years are factual.

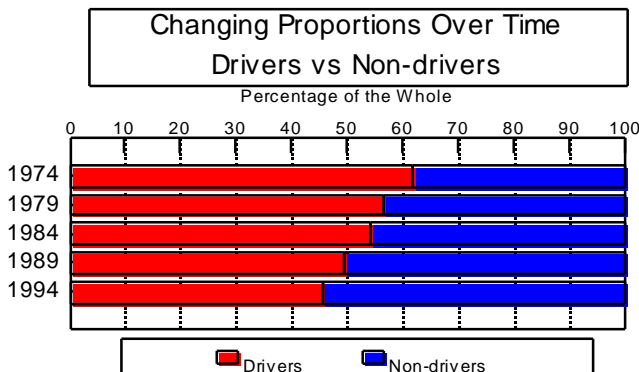
	CBP Data - Changes in Employment Categories					Percent Changes	
	1974	1979	1984	1989	1994	10 yrs	20 yrs
Services	2,256	3,163	3,680	7,003	9,686	163.2%	329.3%
Retail	3,915	5,647	5,651	7,110	8,790	55.5%	124.5%
Manufacturing	3,487	4,433	3,904	4,893	5,450	39.6%	56.3%
Construction	1,203	1,134	916	1,358	1,647	79.8%	36.9%
Trans./Utilities	677	1,145	1,255	1,131	1,091	-13.1%	61.2%
F. I. R. E.	634	873	898	1,011	1,620	80.4%	155.5%
Wholesale	513	620	611	713	952	55.8%	85.6%
Agriculture	20	20	67	89	198	195.5%	890.0%
Mining	20	20	17	10	57	235.3%	185.0%
Not Classifiable	153	136	270	351	10		
Total	12,878	17,191	17,269	23,669	29,501	70.8%	129.1%

	University Data - Changes in Employment Categories					Percent Changes	
	1974	1979	1984	1989	1994	10 yrs	20 yrs
Faculty/Staff	3,178	3,606	3,649	3,948	4,006	9.8%	26.1%
Student Employees	3,354	3,806	3,914	4,145	4,187	7.0%	24.8%
Total	6,532	7,412	7,563	8,093	8,193	8.3%	25.4%

italicized student employment numbers are calculated estimates

Of the drivers shown, which we defined earlier, F.I.R.E. and Manufacturing had sizeable growth. Construction, University staff and students growth is flatter in relation to these areas. Although Agriculture has a large percentage increase, the actual numbers are still very low. Mining was too small to plot. Their numbers are included in the table above.

Concerning non-drivers, the Service sector starts a remarkable upswing in 1984. This is also evident on the REIS Data, which follows this section. Retail enjoyed a large increase in numbers, as well.

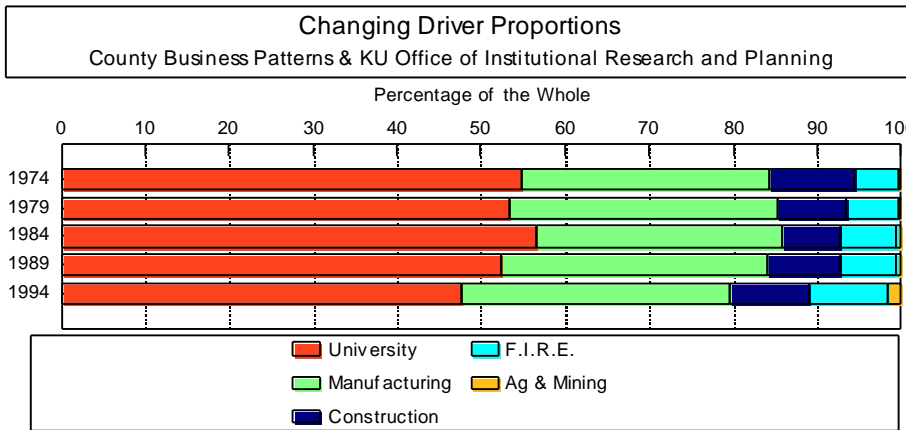


Considering the differences between drivers and non-drivers yields the result shown at left. Non-drivers have taken a steadily increasing share of the total employment pie. In spite of growth in our basic industries, their representation is shrinking within the total employment picture.

Driver Category	1974	1979	1984	1989	1994
University	54.9%	53.4%	56.6%	52.4%	47.7%
Manufacturing	29.3%	31.9%	29.2%	31.7%	31.8%
Construction	10.1%	8.2%	6.9%	8.8%	9.6%
F.I.R.E.	5.3%	6.3%	6.7%	6.5%	9.4%
Agriculture	0.2%	0.1%	0.5%	0.6%	1.2%
Mning	0.2%	0.1%	0.1%	0.1%	0.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

In the table to the left and the graph below, an estimate was calculated for KU student employees. As a portion of the whole, University employment has declined by about 7 points while manufacturing has grown a couple of points above the level it was 20 years ago. The most significant increase seems to be in the Finance, Insurance and Real Estate category, which grew from 5% to 9% of the whole during that time.

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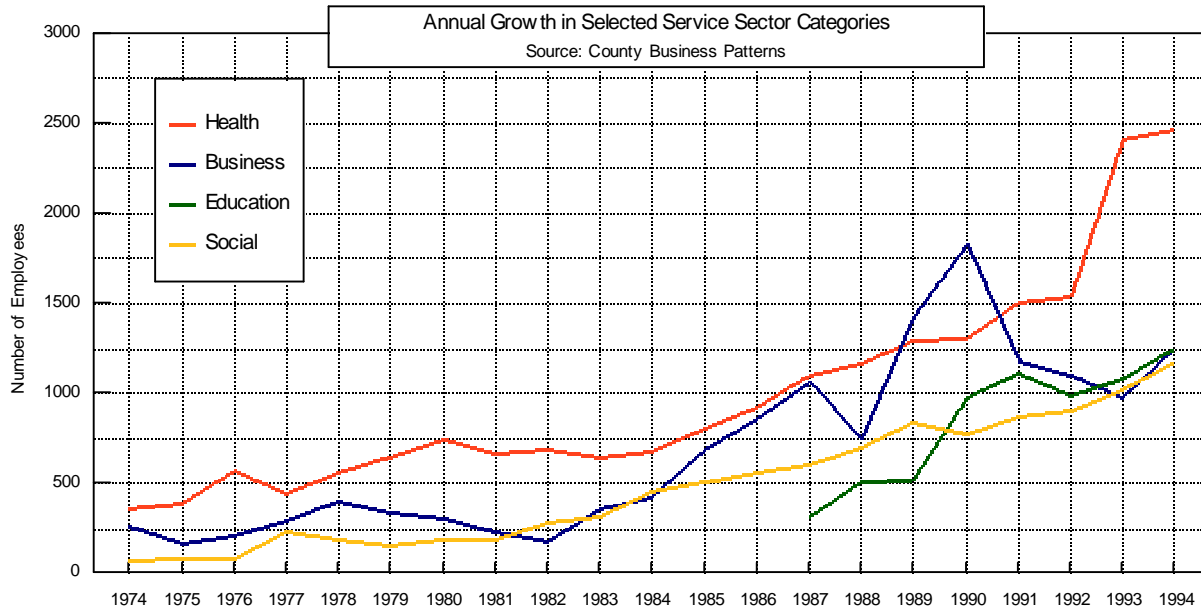


DETAILS OF NON-DRIVER FIGURES

The **Services** category was further broken down in order to identify specific areas of growth. Categories change when jobs are re-classified. For example, in 1974, there was not a separate category for computer services under the **Business Services** category. There were computer workers, to be sure, but there were so few that they were included in the miscellaneous business service workers category. In addition, the Census Bureau, responding to our specific question regarding the “mountain” centered on the year 1990 that appears in the Business

	CBP Data - Changes in Service Employment Sub-Categories					Percent Changes	
	1974	1979	1984	1989	1994	10 yrs	20 yrs
Hotel	245	195	250	354	424	69.6%	73.1%
Personal	302	299	317	390	511	61.2%	69.2%
Business	272	338	427	1424	1255	193.9%	361.4%
Automotive	89	87	104	167	245	135.6%	175.3%
Motion Pictures	77	152	99	151	144	45.5%	87.0%
Amusements	154	123	108	183	359	232.4%	133.1%
Health	363	645	681	1294	2468	262.4%	579.9%
Legal	n/a	70	83	111	114	37.3%	n/a
Educational	425	500	499	527	1259	152.3%	196.2%
Social	79	159	455	846	1180	159.3%	1393.7%
Memberships	197	306	317	460	686	116.4%	248.2%
Engineering/Mgmt	n/a	80	69	402	815	1081.2%	n/a

Services line in the graph below, wrote that three factors played a role. First, there were SIC definitional changes in 1987, so the figures published for 1988 were based on those new definitions. Next, the temporary help industry, which is large in business services, is volatile. Finally, data for 1988 and 1993 reflects updates from the 1987 and 1992 Censuses of Service Industries, therefore creating numbers that may seem very different from adjacent years. Note the large increase in **Health Services** from 1992 to 1993. Information provided by the



Census Bureau indicates that Lawrence Memorial Hospital had been omitted from the Health Service records prior to 1993. They did not say where else it may have been counted. Therefore, the large jump is not indicative of an increase in health services, only a more complete count.

A steep slope in **Social Services** started after 1979 and continues through 1994. This category includes SIC codes beginning with the numbers 83, such as individual, family, job training, child care, and residential care services, etc.

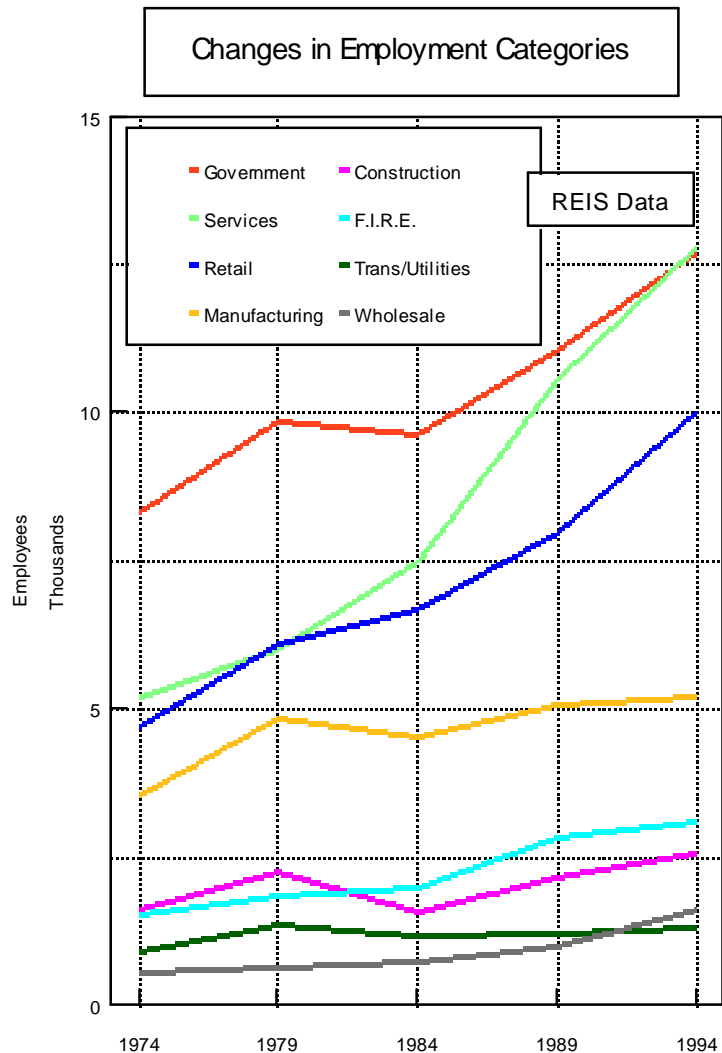
A more recent upturn occurred in **Educational Services**, which changed directions sharply after 1989. This does not include public schools, which are definitionally eliminated by CBP as belonging to the category of government, but covers other instructional services: everything from Montessori to baton twirling school. Education sector figures prior to 1987 were given as estimated ranges, and have been omitted from this graph to avoid confusion. During this time, the number of Educational Services employees is estimated as falling consistently between 300 and 550.

Although some increases or decreases in these lines are due to re-classifications, the longer trends should still be apparent.

REGIONAL ECONOMIC INFORMATION SYSTEM (REIS) DATA

Figures used in this section are from the Regional Economic Information System Data, and are computed in a different way than the CBP data. Figures are included for the Government category and for Self-employed, which is a count that contributes to virtually all categories. We included this data source for two reasons: to corroborate the CBP data and to examine total government employment figures.

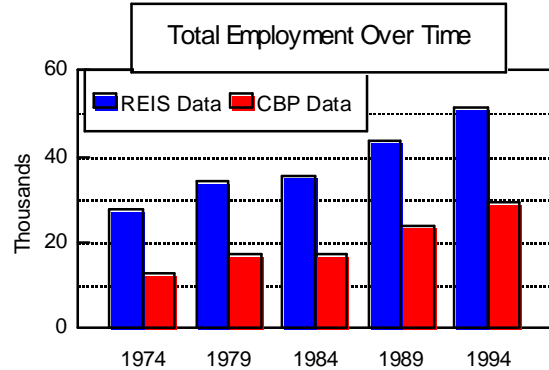
The graph at right indicates that the categories that are common with the County Business Pattern data are generally moving in the same directions at the same times. Specifically, the Services and Retail categories start to increase rapidly after 1984. It is probably more likely that the self-employed are in a Services category than, for example, a manufacturing category, which could further explain differences between these and the CBP figures. However, the basic movement of the trends remains with either measure. The numerical table supporting this graph is shown below.



	REIS Data - Changes in Employment Categories					Percent Changes	
	1974	1979	1984	1989	1994	10 yrs	20 yrs
Government	8,354	9,886	9,675	11,075	12,739	31.7%	52.5%
Services	5,249	6,018	7,516	10,580	12,836	70.8%	144.5%
Retail	4,733	6,120	6,720	8,006	10,037	49.4%	112.1%
Manufacturing	3,563	4,872	4,564	5,109	5,219	14.4%	46.5%
Construction	1,655	2,255	1,579	2,177	2,563	62.3%	54.9%
Trans./Utilities	913	1,377	1,193	1,232	1,339	12.2%	46.7%
F. I. R. E.	1,566	1,857	1,990	2,862	3,123	56.9%	99.4%
Wholesale	555	667	742	1,014	1,651	122.5%	197.5%
Agriculture	126	86	137	234	444	224.1%	252.4%
Mining	43	65	121	150	229	89.3%	432.6%
Farming	952	1018	1,120	979	901	-19.6%	-5.4%
Total	27,709	34,221	35,357	43,418	51,081	44.5%	84.3%

You have probably noticed that the total employment changes in the REIS data produce a percentage figure lower than that of the CBP data. This is because of the large government category that only REIS includes. Since it starts from a higher number, and since the government category has not changed as much as some others over time, the calculation produces a smaller percentage change figure.

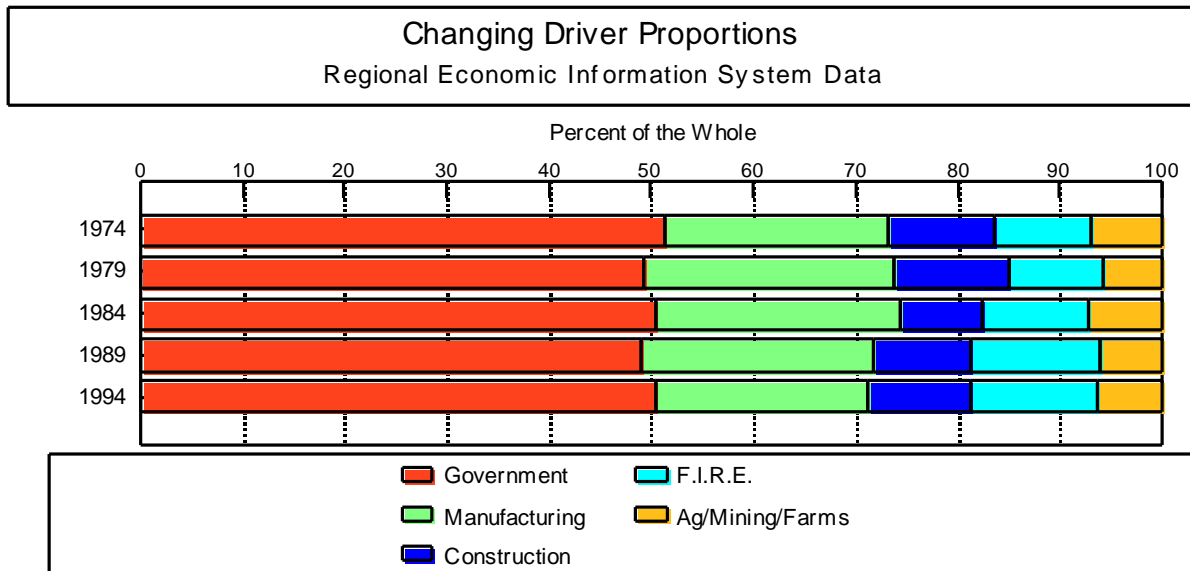
Of the government figures, 5% represent military, another 5% represent Federal civilians, and the remaining 90% are comprised of state and local government workers, which includes all public school employees at all levels. A drawback to this data set is that more detailed figures are not available within employment categories, which is why CBP data was selected for that portion of the analysis. Notice in the graph at right that the measure of total employment of each of these two different data sources have increased in approximately the same proportion to each other over these time periods.



Comparing the categories that are commonly considered “drivers” to measure the proportionate changes they have experienced yields this table and graph (below). Notice that there have not been significant changes within this group of categories. Even after 20 years, each of the categories, with the exception of F.I.R.E., is within around 1% of the proportion they held compared to the others.

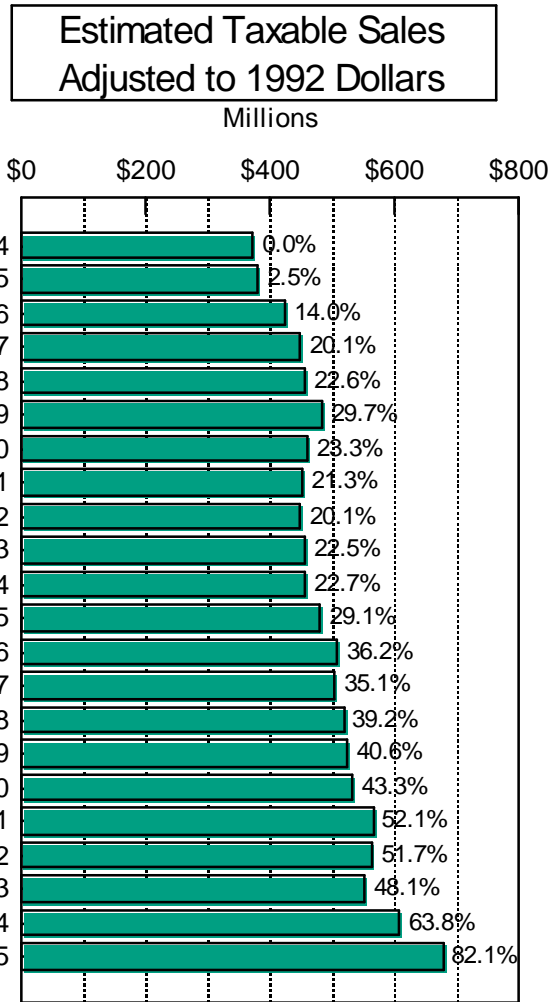
REIS Data - Percentage of the Driver Whole

	1974	1979	1984	1989	1994
Government	51.4%	49.3%	50.4%	49.0%	50.5%
Manufacturing	21.9%	24.3%	23.8%	22.6%	20.7%
Construction	10.2%	11.3%	8.2%	9.6%	10.2%
F.I.R.E.	9.6%	9.3%	10.4%	12.7%	12.4%
Ag/Mining/Farms	6.9%	5.8%	7.2%	6.0%	6.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%



TAXABLE SALES CALCULATED AND ADJUSTED FOR INFLATION

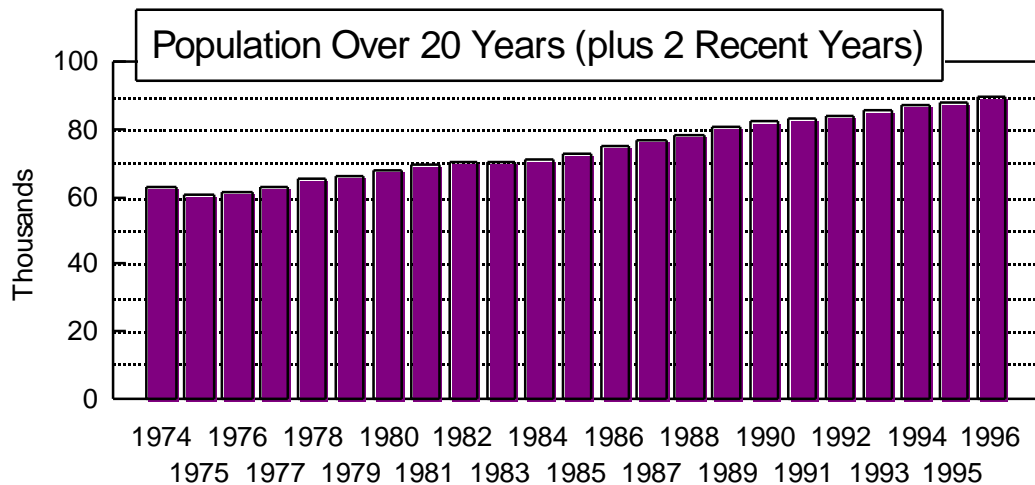
The size of the economy, as measured by Taxable Sales, increased over 33% in the ten year period from 1984 to 1994 and just under 64% in the twenty year period from 1974 to 1994. The figures shown here are from the Bureau of Economic Analysis in the U. S. Bureau of the Census and have been adjusted for inflation to 1992 dollars. The percentage numbers next to each bar reflect the amount of change compared to the 1974 base year. The extra year of 1995 has been included on this chart just because the figures are available.



POPULATION MEASUREMENTS

These population figures are from the Bureau of Economic Analysis and the Bureau of the Census. The years starting at 1990 were revised in 1997.

Taking into account a slight dip in population in the mid 1970s, the population of Douglas County has increased by almost 39% in the twenty year period from 1974 to 1994. This constitutes an average population growth of about 1.95% per year. Growth in the last two years was less than this long term rate, posting a 1.4% and 1.7% gain for 1995 and 1996, respectively.



MISCELLANEOUS EMPLOYMENT MEASURES

This page assembles several different measures of growth relating to employment that, even though they can't be compared directly to each other, provide an interesting view of the trends in each of the areas they define.

Douglas County in the 1990s

Year	U.S. Census Revised DG Population	Civilian Labor Force	KDHR DG Wage & Salary Jobs	KDHR UI Covered Workers
1990	82,185	44,219	36,592	32,637
1991	83,136	44,792	37,117	33,384
1992	83,920	47,899	39,408	34,705
1993	85,965	49,279	40,433	35,787
1994	87,181	49,234	41,983	37,280
1995	88,391	49,960	43,225	39,018
1996	89,899	50,726	44,117	n/a

Census - This is simply the estimated number of people living in Douglas County, as recently revised by the U.S. Bureau of the Census.

Civilian Labor Force - This figure is from the Kansas Department of Human Resources and is Place of Residence data. This is the number of people living in Douglas County who are working or willing to work. The unemployed are included in this number.

Change Period	Population Annual % Change	Labor Force Annual % Change	W&S Jobs Annual % Change	Workers Annual % Change
90-91	1.2%	1.3%	1.4%	2.3%
91-92	0.9%	6.9%	6.2%	4.0%
92-93	2.4%	2.9%	2.6%	3.1%
93-94	1.4%	-0.1%	3.8%	4.2%
94-95	1.4%	1.5%	3.0%	4.7%
95-96	1.7%	1.5%	2.1%	n/a
90-96	9.4%	14.7%	20.6%	19.6%

(to 1995)

Wage and Salary Employment - This figure is also from KDHR and basically counts the number of jobs in Douglas County. However, note that part-time jobs are also counted, so a single worker holding two part-time jobs counts as 2 in this figure.

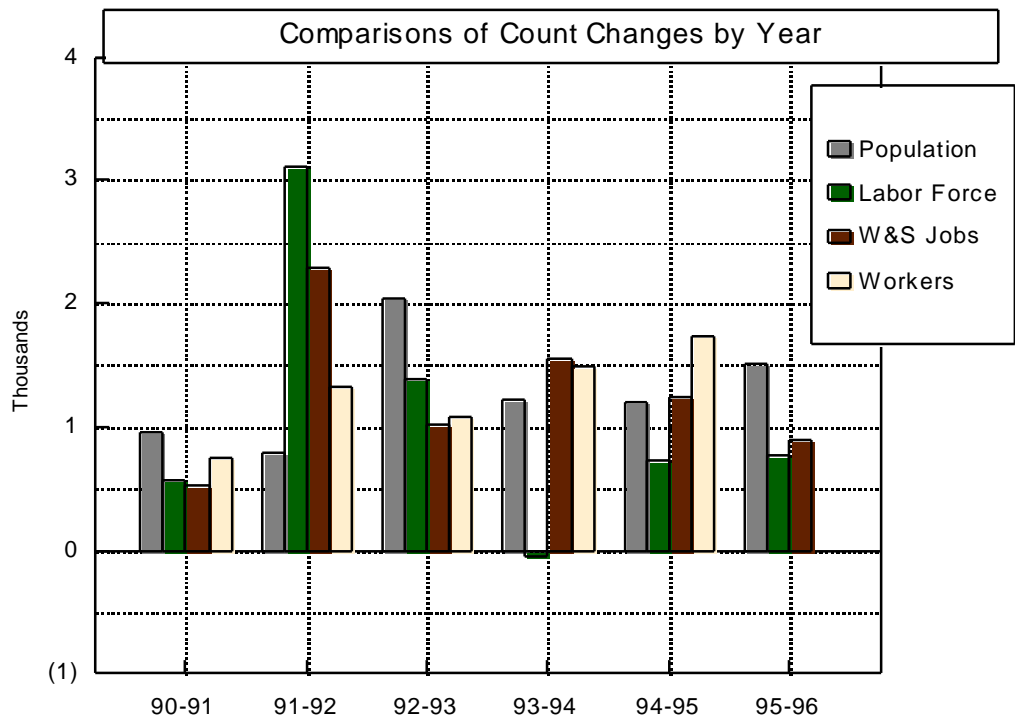
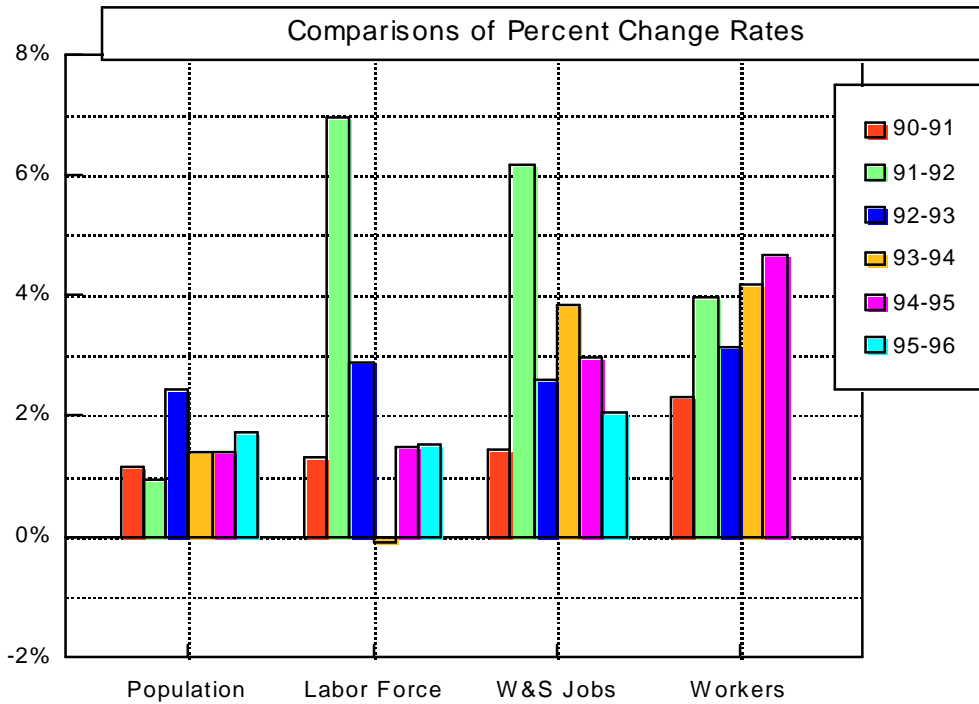
Change Period	Population Annual Count Change	Labor Force Annual Count Change	W&S Jobs Annual Count Change	Workers Annual Count Change
90-91	951	573	525	747
91-92	784	3,107	2,291	1,321
92-93	2,045	1,380	1,025	1,082
93-94	1,216	(45)	1,550	1,493
94-95	1,210	726	1,242	1,738
95-96	1,508	766	892	n/a
90-96	7,714	6,507	7,525	6,381

(to 1995)

Unemployment Insurance Covered Workers - This

figure was obtained from KDHR especially for this report. This is a count of the jobs that are eligible for benefits under the unemployment insurance system. Once again, a single worker holding two part-time jobs that are each eligible for unemployment benefits would count as 2 in this figure. However, that seems to be less probable than in the Wage & Salary column.

A graphical representation of these percentage changes appears on the following page. Note the absence of any correlation between population and the other measures. All that can be said is that, over this time frame, jobs increased at a faster rate than population. The contrary position, taken in our First Quarterly Report, did not take seasonalities or annual averages into account, but compared only first quarter figures. It was a departure from our usual short-run wariness.



CLOSING

The difficulty in drawing cause and effect conclusions from the wide ranging collection of data within this report must be stressed. The reader is encouraged to consider each of the measures over an appropriate time frame of reference. While the question of what is driving the economy can be measured, the apparent destination may or may not be agreeable and changing directions is very hard.