



**2002-2003 STRENGTH INDEX:  
A MEASURE OF THE  
PROSPERITY OF KANSANS**

**CD STUDY REPORT # 222**

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# TABLE OF CONTENTS

INTRODUCTION.....	1
WEALTH INDEX (WI).....	1
PERSONAL INCOME INDEX (PII).....	1
EMPLOYMENT INDEX (EI).....	2
STRENGTH INDEX (SI).....	2
DATA SOURCES.....	2
Map 1: Wealth Index.....	4
Map 2: Personal Income Index.....	5
Map 3: Employment Index.....	6
Map 4: Strength Index.....	7
Table 1: 2002-2003 Strength Indices for Kansas Counties.....	8-10
Table 2: Ranked Strength Index for Kansas Counties.....	11

## INTRODUCTION

This annual report assesses the economic prosperity in Kansas with three different indices. This is the eleventh report in the series. The historical data for this time series is available on the Internet at [www.agecon.ksu.edu/ddarling](http://www.agecon.ksu.edu/ddarling) in the CD Study Reports section.

The purpose of this Strength Index publication is to measure the prosperity of people in all 105 counties in Kansas. Prosperity, or economic well being, is important to all Kansas citizens and can be measured in various ways depending on the definition of prosperity. This report provides one composite index. This composite index is made up of three indices measuring wealth, income, and employment.

The Strength Index is used to compare counties. Many people are interested in the rank of their home county and how it compares with neighboring counties, or how it compares to a larger county with a regional trade center. This approach to the data is called a cross sectional analysis.

Also, using past reports, comparisons can be made over time. In this way, it is possible to create a progress report for individual or groups of counties. This approach to the data is called a longitudinal analysis.

## WEALTH INDEX

The *Wealth Index (WI)* is one part of the *Strength Index (SI)*. The authors use the WI to measure the relative wealth of the residents of each county. County per capita wealth is estimated by summing the appraised values of residential property, mobile homes, and motor vehicles used for personal use as reported by the *Kansas Department of Revenue* in the year 2003. The population used in this report comes from the 2002 Census estimates. Next, this ratio is divided by the state per capita value. The county Wealth Index is the ratio of the county's per capita wealth over the state per capita wealth.

Johnson County has the highest WI of 1.89; nearly double the state's WI value of 1.00. The next ten counties in descending order are Miami (1.40), Douglas (1.21), Leavenworth (1.06), Saline (0.99), Shawnee (0.98), Jefferson (0.96), Ellis (0.96), Butler (0.93), and McPherson (0.92).

Five of the counties with the lowest values in ascending order are Jewell (0.38), Chautauqua (0.41), Comanche (0.45), Elk (0.47) and Barber (0.50). The 105 county average is 0.67. Counties with red numbers are ranked high while counties with blue numbers are ranked low. See Map 1, Table 1, and 2.

## PERSONAL INCOME INDEX

The second component of the *Strength Index* is the *Capita Personal Income Index (PII)*. This measures the relative level of income in each county. The Index is simply a ratio of county over State per capita incomes. The Kansas per capita income in 2002, the most recent data available, was estimated to be \$28,838. This is high relative to almost all of the 105 counties. Only five have a per capita income number equal to or greater than the State value. The weight of the top five counties with high incomes, particularly in Johnson County skews the distribution of the PII across Kansas.

The ten counties with highest PII are: Johnson (1.52), Sedgwick (1.07), Shawnee (1.06) Saline (0.99), Marshall (0.99), Geary (0.98), Harvey (0.97), Ness (0.97), and Ellis (0.95) and Clark (0.92).

Five counties with the lowest PII indexes in ascending order are Woodson (0.60), Kearny (0.64), Linn (0.65), Marion (0.66), and Anderson (0.67). The 105 county average PII is 0.82. Counties with red numbers are ranked high while counties with blue numbers are ranked low. See Map 2, Table 1, and 2.

## EMPLOYMENT INDEX

The last component of the *Strength Index (SI)* is the *Employment Index (EI)*, which measures the proportion of the population actively participating in the labor force. This county proportion is then divided by the State-wide value, 0.51. Strong economies will have high rates of participation. Therefore, counties with low values will usually have either higher than average rates of unemployment or higher than average percentages of retired residents. For example, the unemployment rate in Doniphan County was high in 2003 compared to the State. The annual average unemployment rate in 2003 was 10.2 percent compared to a State rate of 5.4 percent. Doniphan County's Employment Index is 0.78, second lowest in the State.

A special problem with employment is how to handle the active duty military. Each military installation has many soldiers who live all around their fort. Complete information on these living and commuting patterns was not available to K-State. Therefore, the authors made some assumptions to allocate these employees to their individual home counties. Because this report is a report on the prosperity of people based on where they live, a number of assumptions were made. Fort Riley's total population of active duty soldiers was 11,616 based on their official count at the end of the last fiscal year. This military population was allocated across adjacent counties in the following way: 350 to Clay County, and 350 to Dickinson County. Then Geary and Riley counties were treated as one county and an EI was computed for the two as one county. All of Fort Leavenworth's personnel, 3,226, were allocated to Leavenworth County in the year 2003. All of McConnell AFB military personnel (2,940) were allocated to Sedgwick County.

The top ten counties with the highest EI are Sherman (1.41), Jackson (1.38), Ellis (1.27), Pottawatomie (1.18), Jewell (1.17), Norton (1.16), Thomas (1.15), Marshall (1.15), Geary (1.15), and Riley (1.15).

Bottom five counties in ascending order are Linn (0.68), Doniphan (0.78), Greenwood (0.78), Chautauqua (0.79), and Elk (0.80). The 105 county Kansas average is 1.00. Counties with red numbers are ranked high while counties with blue numbers are ranked low. See *Map 3, Table 1 and 2*.

## STRENGTH INDEX

This report's *Strength Index* is made up of data from 2002 estimated personal income, the 2003 average employment numbers, and the 2003 appraised value of real and personal property. The three components of the SI are given equal weight, therefore; the SI is simply the sum of the WI, EI, and PII.

In this report, only seven of 105 counties have SI numbers of 3.00 or higher. The leader is Johnson County with a 4.53 score, followed at a distance by Ellis County at 3.17. The rest of the counties in the top are Miami (3.15), Douglas (3.13), Saline (3.07), Shawnee (3.04), and Jackson (3.00).

Other highly ranked counties, in descending, order are Sherman (2.99), Sedgwick (2.94), and McPherson (2.93).

The bottom five counties in ascending order are Chautauqua (1.94), Elk (1.98), Woodson (1.98), Greenwood (2.02), and Kearny (2.06). The 105-county average is 2.48. The median value is 2.43 (Ottawa County). The All Kansas Value is 3.00. See *Map 4, Table 1, and Table 2*.

## DATA SOURCES

Data on the 2002 population is from the **US Census Bureau** estimates for July 1, 2002. These numbers were adjusted downward to account for all those who are institutionalized in prisons, jails, psychiatric hospitals, and in other institutions. This information can be found on the Internet at [www.census.gov](http://www.census.gov).

Data used in creating Wealth Index was obtained from 2003 property assessments provided by the **Kansas Department of Revenue, Division of Property Valuation**. Additional information is available on its website: [www.ksrevenue.org/pro](http://www.ksrevenue.org/pro).

Data used to create the Employment Index comes from several sources. Civilian employment data for 2003 is provided by the **Kansas Department of Human Resources, Labor Market Information Services**. Additional information can be found at: [www.hr.state.ks.us](http://www.hr.state.ks.us)

The public affairs offices at the three military installations provided military employment data for FY 2003.

Data to create the Personal Income Index comes from the estimated 2002 per capita income data published in **The Governor's Economic and Demographic Report**, published in January 2004. The web site of the Kansas Division of the Budget can be found at: <http://da.state.ks.us/budget>

**Additional related information** can be found in a series of annual CD Study Reports and Extension Bulletins are available on Dr. Darling's website at [www.agecon.ksu.edu/ddarling](http://www.agecon.ksu.edu/ddarling).

**CD Study Reports:**

**CD #221** County Trade Pull Factors Annual Report for FY 2003

**CD #211** Regional Analysis of Taxable Business Activity in Different Business Classes for FY 2002

**CD #223** A Study of Retail Trade in First Class Cities Across Kansas for FY 2003.

**Extension Bulletins:**

Strategic Planning for Community Development (**L-830**)

Alternative Planning Procedures (**MF-2122**)

Sustaining Progress (**MF-2563**)

105 County Average = 0.67

Maximum Value = 1.89

Minimum = 0.37

# MAP-1

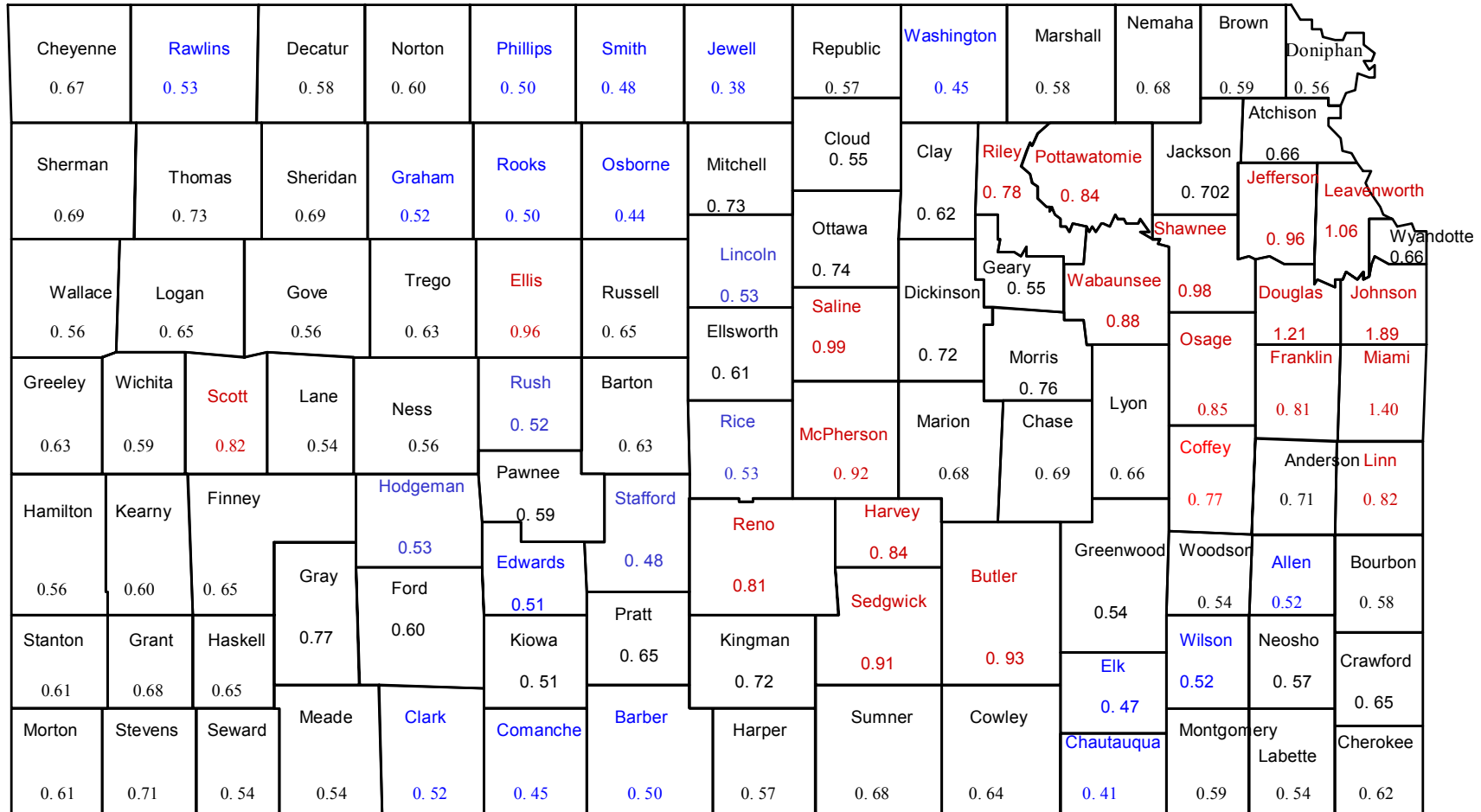
## Wealth Index

### 2003

David L. Darling

Sreedhar Upendram

April 2004



**Legend**  
 Top 20% :Red  
 Bottom 20%: Blue

**Data Source:** Kansas Department of Revenue, Division of Property Valuation, 2003 Report

K –State Research and Extension.

105 County Average = 0.82

Maximum Value = 1.52

Minimum = 0.60

## MAP-2

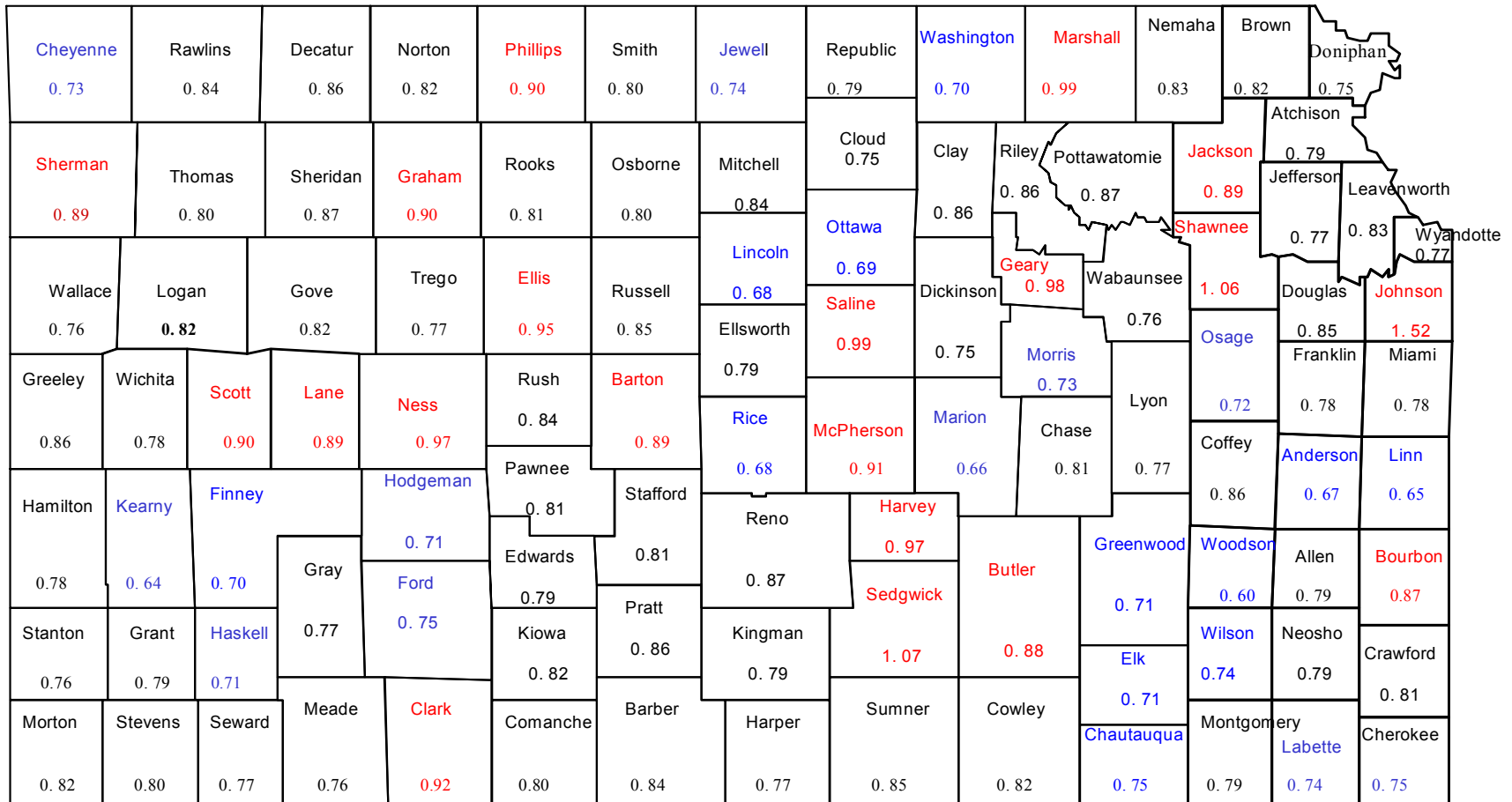
### Personal Income Index (PII)

2003

David L. Darling

Sreedhar Upendram

April 2004



Legend  
 Top 20% : Red  
 Bottom 20% : Blue

Data Source: The Governor's Economic and Demographic Report 2003-2004

K - State Research and Extension.

105 County Average = 1.00

Maximum Value = 1.40

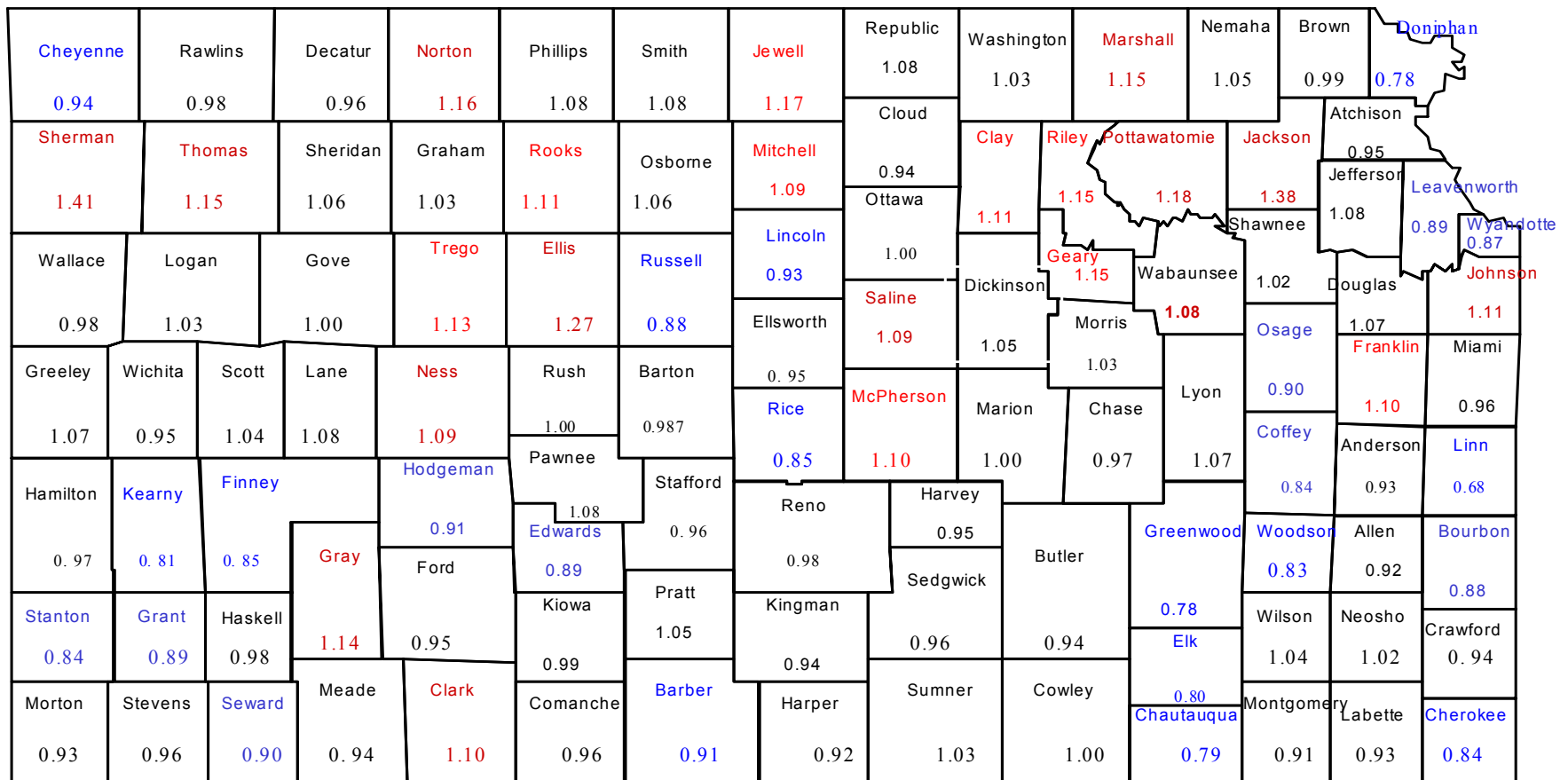
Minimum Value = 0.60

### MAP-3 Employment Index 2003

David L. Darling

Sreedhar Upendram

April 2004



**Data Source:** Kansas Department of Human Resources, Labor Market  
Information Services Annual Report for 2003  
Index prepared by K –State Research and Extension.

Legend  
Top 20% : Red  
Bottom 20%: Blue

105 County Average = 2.48

Maximum Value = 4.53

Minimum = 1.94

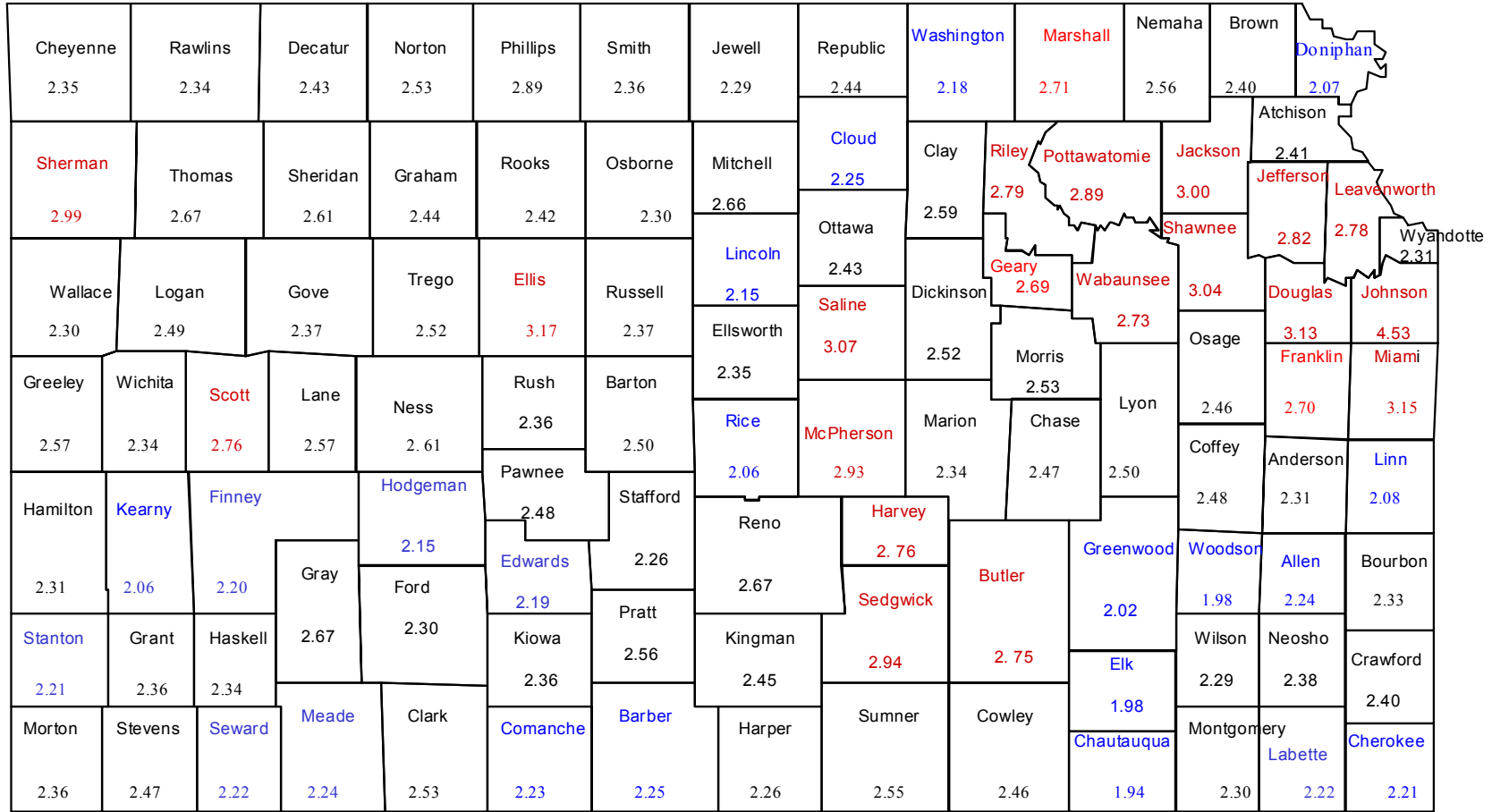
# MAP-4 Strength Index

David L. Darling

Sreedhar Upendram

April 2004

2003



Index prepared by K-State Research and Extension, April 2004

Legend  
Top 20%: Red  
Bottom 20%: Blue

**TABLE 1: 2002-2003 STRENGTH INDICES FOR KANSAS COUNTIES**

<b>County Name</b>	<b>Wealth Index 2003</b>	<b>Income Index 2003</b>	<b>Employment Index 2003</b>	<b>Strength Index 2003</b>
Allen	0.517	0.795	0.923	2.236
Anderson	0.711	0.667	0.931	2.308
Atchison	0.663	0.785	0.968	2.415
Barber	0.498	0.844	0.905	2.247
Barton	0.633	0.892	0.972	2.498
Bourbon	0.576	0.875	0.882	2.333
Brown	0.594	0.819	0.990	2.403
Butler	0.926	0.878	0.941	2.746
Chase	0.688	0.813	0.968	2.468
Chautauqua	0.408	0.747	0.787	1.941
Cherokee	0.618	0.753	0.839	2.210
Cheyenne	0.675	0.733	0.943	2.351
Clark	0.517	0.917	1.095	2.529
Clay	0.620	0.861	1.108	2.589
Cloud	0.547	0.753	0.945	2.246
Coffey	0.774	0.861	0.843	2.478
Comanche	0.454	0.806	0.967	2.226
Cowley	0.639	0.823	1.004	2.466
Crawford	0.647	0.813	0.943	2.403
Decatur	0.606	0.865	0.965	2.435
Dickinson	0.722	0.750	1.047	2.519
Doniphan	0.559	0.747	0.769	2.074
Douglas	1.211	0.847	1.068	3.126
Edwards	0.510	0.788	0.891	2.189
Elk	0.468	0.705	0.802	1.975
Ellis	0.955	0.948	1.267	3.169
Ellsworth	0.613	0.792	0.945	2.350
Finney	0.649	0.701	0.845	2.195
Ford	0.601	0.747	0.950	2.298
Franklin	0.811	0.788	1.096	2.695
Geary	0.552	0.983	1.150	2.685
Gove	0.557	0.813	1.002	2.372
Graham	0.515	0.903	1.029	2.447
Grant	0.678	0.795	0.892	2.366
Gray	0.770	0.771	1.136	2.677
Greeley	0.632	0.861	1.076	2.569
Greenwood	0.537	0.705	0.776	2.018

Source: Sreedhar Upendram and David Darling, K-State Research and Extension, 2004

TABLE 1: 2002-2003 STRENGTH INDICES FOR KANSAS COUNTIES

<b>County Name</b>	<b>Wealth Index 2003</b>	<b>Income Index 2003</b>	<b>Employment Index 2003</b>	<b>Strength Index 2003</b>
Hamilton	0.558	0.781	0.975	2.315
Harper	0.568	0.771	0.926	2.265
Harvey	0.838	0.969	0.951	2.758
Haskell	0.654	0.708	0.982	2.344
Hodgeman	0.532	0.712	0.910	2.154
Jackson	0.726	0.892	1.382	3.001
Jefferson	0.960	0.771	1.086	2.816
Jewell	0.375	0.743	1.171	2.289
Johnson	1.895	1.524	1.113	4.533
Kearny	0.603	0.642	0.813	2.058
Kingman	0.720	0.788	0.940	2.448
Kiowa	0.547	0.826	0.993	2.366
Labette	0.544	0.743	0.931	2.218
Lane	0.593	0.892	1.085	2.570
Leavenworth	1.056	0.837	0.887	2.780
Lincoln	0.533	0.684	0.935	2.152
Linn	0.824	0.649	0.608	2.081
Logan	0.651	0.819	1.027	2.497
Lyon	0.662	0.771	1.074	2.507
Marion	0.682	0.656	1.001	2.340
Marshall	0.577	0.986	1.146	2.709
McPherson	0.922	0.913	1.098	2.933
Meade	0.542	0.764	0.939	2.244
Miami	1.404	0.781	0.965	3.150
Mitchell	0.736	0.840	1.087	2.663
Montgomery	0.593	0.792	0.918	2.303
Morris	0.768	0.733	1.032	2.532
Morton	0.608	0.826	0.928	2.363
Nemaha	0.678	0.833	1.057	2.568
Neosho	0.570	0.792	1.021	2.383
Ness	0.558	0.965	1.087	2.610
Norton	0.559	0.816	1.158	2.533
Osage	0.848	0.722	0.896	2.467
Osborne	0.437	0.799	1.067	2.302
Ottawa	0.747	0.688	0.997	2.432
Pawnee	0.593	0.809	1.080	2.481
Phillips	0.499	0.896	1.080	2.474
Pottawatomie	0.846	0.868	1.175	2.889

Source: Sreedhar Upendram and David Darling, K-State Research and Extension, 2004

TABLE 1: 2002-2003 STRENGTH INDICES FOR KANSAS COUNTIES

County Name	Wealth Index	Income Index	Employment Index	Strength Index
	2003	2003	2003	2003
Pratt	0.651	0.858	1.052	2.560
Rawlins	0.529	0.840	0.977	2.346
Reno	0.813	0.868	0.984	2.665
Republic	0.565	0.788	1.090	2.444
Rice	0.532	0.684	0.846	2.062
Riley	0.777	0.861	1.150	2.788
Rooks	0.502	0.816	1.109	2.427
Rush	0.523	0.840	1.005	2.368
Russell	0.650	0.851	0.875	2.376
Saline	0.991	0.990	1.089	3.070
Scott	0.819	0.903	1.042	2.764
Sedgwick	0.911	1.069	0.964	2.944
Seward	0.543	0.774	0.903	2.220
Shawnee	0.976	1.059	1.005	3.040
Sheridan	0.693	0.865	1.059	2.616
Sherman	0.694	0.885	1.408	2.987
Smith	0.480	0.799	1.085	2.364
Stafford	0.484	0.806	0.958	2.248
Stanton	0.609	0.764	0.841	2.214
Stevens	0.713	0.802	0.961	2.476
Sumner	0.676	0.847	1.031	2.555
Thomas	0.734	0.795	1.147	2.677
Trego	0.629	0.767	1.127	2.524
Wabaunsee	0.886	0.757	1.083	2.726
Wallace	0.564	0.760	0.981	2.305
Washington	0.447	0.701	1.031	2.179
Wichita	0.598	0.785	0.955	2.338
Wilson	0.519	0.736	1.042	2.296
Woodson	0.544	0.601	0.832	1.977
Wyandotte	0.661	0.774	0.874	2.310

Source: Sreedhar Upendram and David Darling, K-State Research and Extension, 2004

<b>TABLE 2: RANKED STRENGTH INDEX</b>					
<b>County Name</b>	<b>Rank Order</b>	<b>Strength Index 2002-2003</b>	<b>County Name</b>	<b>Rank Order</b>	<b>Strength Index 2002-2003</b>
Johnson	1	4.533			
Ellis	2	3.169	Rooks	54	2.427
Miami	3	3.150	Atchison	55	2.415
Douglas	4	3.126	Brown	56	2.403
Saline	5	3.070	Crawford	57	2.403
Shawnee	6	3.040	Neosho	58	2.383
Jackson	7	3.001	Russell	59	2.376
Sherman	8	2.987	Gove	60	2.372
Sedgwick	9	2.944	Rush	61	2.368
McPherson	10	2.933	Kiowa	62	2.366
Pottawatomie	11	2.889	Grant	63	2.366
Jefferson	12	2.816	Smith	64	2.364
Riley	13	2.788	Morton	65	2.363
Leavenworth	14	2.780	Cheyenne	66	2.351
Scott	15	2.764	Ellsworth	67	2.350
Harvey	16	2.758	Rawlins	68	2.346
Butler	17	2.746	Haskell	69	2.344
Wabaunsee	18	2.726	Marion	70	2.340
Marshall	19	2.709	Wichita	71	2.338
Franklin	20	2.695	Bourbon	72	2.333
Geary	21	2.685	Hamilton	73	2.315
Gray	22	2.677	Wyandotte	74	2.310
Thomas	23	2.677	Anderson	75	2.308
Reno	24	2.665	Wallace	76	2.305
Mitchell	25	2.663	Montgomery	77	2.303
Sheridan	26	2.616	Osborne	78	2.302
Ness	27	2.610	Ford	79	2.298
Clay	28	2.589	Wilson	80	2.296
Lane	29	2.570	Jewell	81	2.289
Greeley	30	2.569	Harper	82	2.265
Nemaha	31	2.568	Stafford	83	2.248
Pratt	32	2.560	Barber	84	2.247
Sumner	33	2.555	Cloud	85	2.246
Norton	34	2.533	Meade	86	2.244
Morris	35	2.532	Allen	87	2.236
Clark	36	2.529	Comanche	88	2.226
Trego	37	2.524	Seward	89	2.220
Dickinson	38	2.519	Labette	90	2.218
Lyon	39	2.507	Stanton	91	2.214
Barton	40	2.498	Cherokee	92	2.210
Logan	41	2.497	Finney	93	2.195
Pawnee	42	2.481	Edwards	94	2.189
Coffey	43	2.478	Washington	95	2.179
Stevens	44	2.476	Hodgeman	96	2.154
Phillips	45	2.474	Lincoln	97	2.152
Chase	46	2.468	Linn	98	2.081
Osage	47	2.467	Doniphan	99	2.074
Cowley	48	2.466	Rice	100	2.062
Kingman	49	2.448	Kearny	101	2.058
Graham	50	2.447	Greenwood	102	2.018
Republic	51	2.444	Woodson	103	1.977
Decatur	52	2.435	Elk	104	1.975
Ottawa	53	2.432	Chautauqua	105	1.941

Source: Sreedhar Upendram and David Darling, K-State Research and Extension, 2004