2005

Kentucky Annual Economic Report 2005

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2005

Center for Business and Economic Research
Gatton College of Business and Economics
University of Kentucky

UNIVERSITY OF KENTUCKY

Gatton
COLLEGE OF BUSINESS AND ECONOMICS

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Department of Economics

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CBER

CBER… a year of transition

As the 2004 Kentucky Annual Economic Report celebrated the memory of CBER Director, Dr. Mark C. Berger, the 2005 Report reflects a year of transition. While facing many challenges, CBER has continued to serve as a primary resource of economic information and applied economic analysis to policymakers, businesses and citizens of the Commonwealth of Kentucky.

Over the past year CBER has conducted a nationwide search to find a new Director capable of continuing CBER's tradition of service and providing a wealth of new resources to the University of Kentucky and the Commonwealth. This has culminated in the hiring of Dr. Kenneth R. Troske who became the Director of CBER on August 1st of this year.

During the past year, CBER has been able to continue functioning as an active research program thanks to the dedicated service and guidance of the interim Co-Directors, Dr. John E. Garen and Dr. William H. Hoyt. Dr. John E. Garen is a Gatton Endowed Professor and Chair of the Department of Economics at the University of Kentucky. Dr. William H. Hoyt is a Gatton Endowed Professor of Economics and Director of Graduate Studies at the University of Kentucky. Both Dr. Garen and Dr. Hoyt continued their duties as faculty members in addition to serving as interim co-directors during the transitional period. CBER deeply appreciates their willingness to take on the duties of interim Co-Director's and both are well represented in this volume of the 2005 Kentucky Annual Economic Report.

CBER would also like to welcome and introduce Dr. Kenneth R. Troske as the new Director of CBER. Dr. Troske has also been appointed as a William B. Sturgill Professor of Economics at the University of Kentucky. He received his Ph.D. in economics in 1992 from the University of Chicago, his M.A. in economics from the University of Chicago in 1986, and a B.A. in economics from the University of Washington in 1984. Previously, Dr. Troske was an Associate Professor at the University of Missouri – Columbia, an economist with the U.S. Bureau of the Census, and an instructor at Johns Hopkins University. We are looking forward to his leadership and direction in expanding CBER to its full potential in academic research and service to the Commonwealth of Kentucky. Dr. Troske is already moving forward with work on the 2006 Kentucky Annual Economic Report in anticipation of the next legislative section.

Anna Laura Stewart
Economic Analyst
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Center for Business and Economic Research

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The Center for Business and Economic Research (CBER) is the applied economic research branch of the Carol Martin Gatton College of Business and Economics at the University of Kentucky. Its purpose is to disseminate economic information and provide economic and policy analysis to assist decision makers in Kentucky's public and private sectors. In addition, CBER performs research projects for federal, state, and local government agencies, as well as for private-sector clients nationwide. The primary motivation behind CBER's research agenda is the belief that systematic and scientific inquiries into economic phenomena yield knowledge which is indispensable to the formulation of informed public policy.

CBER's research includes a variety of interests. Recent projects have been conducted on manpower, labor, and human resources; transportation economics; health economics; regulatory reform; public finance; and economic growth and development. CBER also publishes the *Carol Martin Gatton College of Business and Economics Working Papers*, which report the results of current research by college faculty.

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Paul Coomes is Professor of Economics and National City Research Fellow at the University of Louisville. Dr. Coomes received his Ph.D. in economics from the University of Texas in 1985. Before going to Texas to finish his graduate training, Paul was assistant director of CBER and helped build databases and models to improve economic intelligence on the Kentucky area. At the University of Louisville, Paul has specialized in regional economic development studies, with particular attention to industrial impacts, peer city analyses, workforce issues, and measurement problems. His research has been published in the Journal of Regional Science, Urban Studies, Environment and Planning A, Economic Development Quarterly, the International Journal of Forecasting, the Journal of Economic and Social Measurement, and the Journal of Economic Dynamics and Control.

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Frank Scott is Gatton Professor of Economics at the University of Kentucky. Formerly he has been an Assistant Professor at Auburn University and Assistant and Associate Professor at the University of Kentucky. He graduated from the College of William and Mary in 1973, majoring in economics. He received the Ph.D. in economics from the University of Virginia in 1979. His teaching interests include microeconomic theory, industrial organization, managerial economics, and law and economics. His research interests include industrial organization, regulation of business, public policy, and applied microeconomics in general. He has published in a variety of academic journals on topics such as franchising, antitrust, tax policy and labor compensation, utility regulation and ratemaking, the economics of lotteries, and the economics of professional sports industries. He has received funding for his research from a variety of federal and state sources. He has served as a consultant to several state and federal government agencies and as a consultant and expert witness for the U.S. Department of Justice and numerous private-sector businesses.

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Anna Laura Stewart is an Economic Analyst for the Center for Business and Economic Research. Ms. Stewart has a B.B.A. in economics from Morehead State University and a M.A. from the Patterson School of Diplomacy and International Commerce at the University of Kentucky. Ms. Stewart provides economic analysis for the Center including economic impact analysis. Prior to joining CBER, Ms. Stewart served as a research fellow at the Indiana Economic Development Council, the economic development research and planning mechanism of the Indiana State Government. While at the Council, Ms. Stewart specialized primarily in labor issues such Indiana's welfare to work programs, and job growth and occupational wage analysis. Ms. Stewart was also a research assistant at MetaMetrics Inc., a private international economic consulting firm located in Washington, D.C., specializing in local development internationally.

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The Economic Recovery: Where We Are Now and the Outlook for 2005

John Garen

This article reviews the path of recovery for the national economy and for Kentucky and makes forecasts for 2005. Though growing, the economy is recovering somewhat slower than many expected. Compared to the recoveries from the recessions of the 1990s and the 1980s, the present recovery displayed a longer delay in the start of job growth. Events and policies that may have influenced the path of recovery, including terrorism, oil prices, and monetary and fiscal policy, are discussed. With this as background, forecasts are made. The forecast is reasonably good, based in part on the strong performance of the economy in the last several quarters. Nationally, solid growth in GDP and employment, modest manufacturing job growth, a decline in the unemployment rate, and low inflation are expected. For Kentucky, I forecast good overall job gains, but not in manufacturing, and a decline in unemployment.

I. Introduction

The National Bureau of Economic Research "officially called" the trough of the recession in the fourth quarter of 2001 and, since then, the economy has been in recovery. Though the economy is growing, economic recovery has been somewhat slower than many expected. This chapter reviews the path of recovery for the national economy and for Kentucky and makes forecasts for 2005. The present recovery is compared to the recoveries from the recessions of the 1990s and the 1980s to assess how much different this one really is compared to previous recoveries. The present recovery shares similarities with that of the 1990s, but there are important differences, including the longer delay in the start of job growth. Events and policies are discussed that may have influenced the path of recovery, including terrorism, oil prices, and monetary and fiscal policy. With this information as a background, a national forecast is presented. Recent trends in the Kentucky economy are discussed along with comparison to national trends followed by a forecast for Kentucky.

The forecast shows a reasonably good picture, based in part on the strong performance of the economy in the last several quarters. Nationally, solid growth in GDP and employment are expected, along with modest manufacturing employment growth, a decline in the unemployment rate, and low inflation. For Kentucky, I forecast good overall job gains, although not in manufacturing, along with a decline in unemployment. The conclusion presents a detailed summary of the entire forecast.

II. The Pattern of Recovery: Is it Different from Past Recessions?

This section examines some patterns of the present recovery and compares them to previous recoveries. The growth in real gross domestic product (GDP), the growth in payroll employment, and the unemployment rate during the present recovery are compared to the recoveries of the 1980s and 1990s. The present recovery is similar to that of the 1990s regarding GDP growth, but employment growth shows a more sluggish and late-developing improvement. The unemployment rate follows a similar pattern.

The first set of columns of Table 1 shows the quarterly (annualized) growth in real GDP for the U.S. economy in the eleven quarters since the trough of the most recent recession. Growth has been positive, averaging 3.47% per quarter, but quite variable, ranging from a low of 0.7% to a high of 7.4%. In order to put this into context, the economy's performance in this recovery is compared to the eleven quarters following the trough of the previous two recessions; the recession of the early 1990s and that of the early 1980s. These are shown in the second and third sets of columns of Table 1, respectively.

Table 1: Quarterly Growth Rate: Percent Change in Real GDP Eleven Quarters Past the Recession Trough

Year	Quarter	2000s	Year	Quarter	1990s	Year	Quarter	1980s
2002	I	3.4	1991	I	-	1983	I	5.0
	II	2.4		II	2.6		II	9.3
	III	2.6		III	1.9		III	8.1
	IV	0.7		IV	1.9		IV	8.4
2003	I	1.9	1992	I	4.2	1984	I	8.1
	II	4.1		II	3.9		II	7.1
	III	7.4		III	4.0		III	3.9
	IV	4.2		IV	4.5		IV	3.3
2004	I	4.5	1993	I	0.5	1985	I	3.8
	II	3.3		II	2.0		II	3.5
	III	3.7		III	2.1		III	6.5
	IV	-		IV	5.5		IV	-
Mean		3.47			3.01			6.09
Coeff.Var.		0.50			0.50			0.37

The data for the recovery of the early 1990s show some comparability to the present one. Real growth averaged 3.01% per quarter and with a high degree of variability, ranging from 0.5% to 5.5%. In order to make more precise comparisons, a standard measure of variability, the coefficient of variation is used. This measure is the ratio of the standard deviation of a set of numbers to its mean. Roughly speaking, the standard deviation is the average variability around the mean. Thus, the coefficient of variation is the variability of a set of numbers relative to its mean.

Based on this measure, the present recovery is similar to that of the 1990s. Both coefficients of variation of GDP growth are .50, indicating that the average variability of growth is about half its mean. The experience of both of these recoveries is quite different than that of the 1980s. During the recovery period of the 1980s, growth averaged 6.09% per quarter, with a coefficient of variation of .37. The level of growth was higher and its variability smaller.

In contrast, the present recovery differs from both previous recessions in employment growth. Table 2 shows the quarterly percentage change in payroll employment for the same time frame as in Table 1.

During the present recovery, the economy has averaged only .08% quarterly employment growth, with a high degree of variability: the coefficient of variation is 2.98. The recovery of the 1990s had an average quarterly employment growth of .31% and the growth was steadier with a coefficient of variation of 1.08. The recovery of the 1980s was stronger and steadier yet. The average quarterly employment growth was .88% with a coefficient of variation of only .36.

Thus, the recovery of the 1980s was stronger and steadier than either of the later recessions in terms of both GDP growth and employment growth. The current recovery is similar to that of the 1990s regarding GDP growth, but has lagged in the strength and steadiness of employment growth. A close look at Table 2 reveals why this is true.

Though employment usually recovers after GDP, the length of time it has taken in this recovery to occur

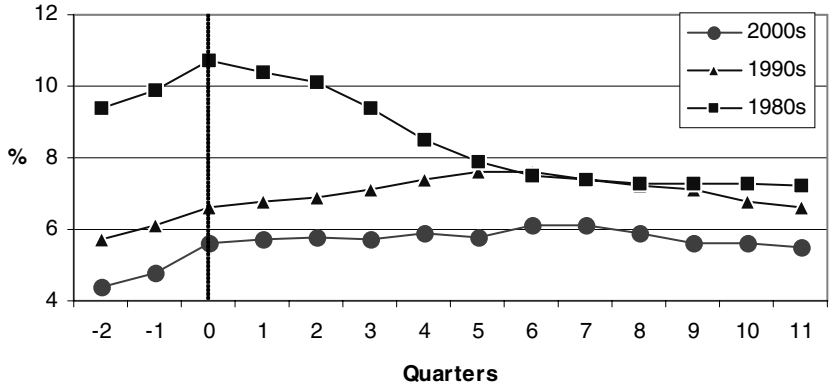
Table 2: Quarterly Growth Rate: Percent Change in Employment Eleven Quarters Past the Recession Trough

Year	Quarter	2000s	Year	Quarter	1990s	Year	Quarter	1980s
2002	I	-0.2	1991	I	-	1983	I	0.4
	II	0.0		II	-0.2		II	1.0
	III	-0.1		III	0.0		III	1.4
	IV	-0.1		IV	0.0		IV	1.1
2003	I	-0.1	1992	I	0.0	1984	I	1.3
	II	0.0		II	0.3		II	1.1
	III	0.0		III	0.2		III	0.8
	IV	0.1		IV	0.5		IV	0.8
2004	I	0.5	1993	I	0.5	1985	I	0.6
	II	0.5		II	0.7		II	0.6
	III	0.3		III	0.6		III	0.6
	IV	-		IV	0.8		IV	-
Mean		0.08			0.31			0.88
Coeff.Var.		2.98			1.07			0.36

has been unusually long. Strong job gains were not seen until eight or nine quarters after the recessionary trough. This is longer than with the two previous recessions. Also, the recent job gains are quite substantial, making employment growth each quarter nearly an "all-or-nothing" outcome. This leads to a high measured variability of employment growth.

These conclusions are reinforced by a look at the path of the unemployment rate. Figure 1 graphs the unemployment rate around each recession just prior to the recessionary troughs and in the subsequent eleven quarters. Both the 1990s and 1980s show a peak in unemployment followed by a rapid fall. Though starting from a lower level of unemployment, the present recovery shows a long plateau in the unemployment rate before declining. This recovery has been slow in taking hold.

Figure 1: Unemployment Rates Prior to and Eleven Quarters Following the Recession Trough



III. Why is This Recovery Different?: Factors Affecting the Economy

It is difficult to be sure what has slowed the present recovery. Each recession is different and is surrounded by unique events. The current situation certainly is exceptional in many respects. Here, several distinctive factors are discussed that may have had an impact on the path of the recovery.

World Events

The present recovery is occurring in the context of two interrelated phenomena: terrorism and rising oil prices. Both have effects on the economy. The perceived threat of terrorism has certainly increased after the events of 9/11, and the actual threat probably is higher also. The subsequent terror events in the Middle East and other parts of the world have reinforced this conclusion. An increased threat of terror is like a negative supply shock. It makes it more costly to produce a given amount of goods and services. Firms and governments spend more resources on security and so less is available to produce other goods and services. Though providing security is valuable, it reduces the return to certain types of investment and lowers the profitability of producing some goods and services. The activities deterred are those that may be potential terror targets or involve exposure to terror threats, such as international travel.

The effect of this on productive activity is difficult to measure. Presumably, firms subject to possible terror threats have increased their security budgets and, as a result, have reduced production and hiring. Data are not available on private firms' security expenditures. However, they are available for the U.S. government. Though examining data on government expenditure on security is not the same as examining firm data, the pattern of security expenditures may be indicative of private sector events and may suggest the level of threat. Also, government expenditures on security use resources that are unavailable for producing other goods and services.

Table 3 shows U.S. government expenditure on military and homeland security from 2000 through 2004.[1]

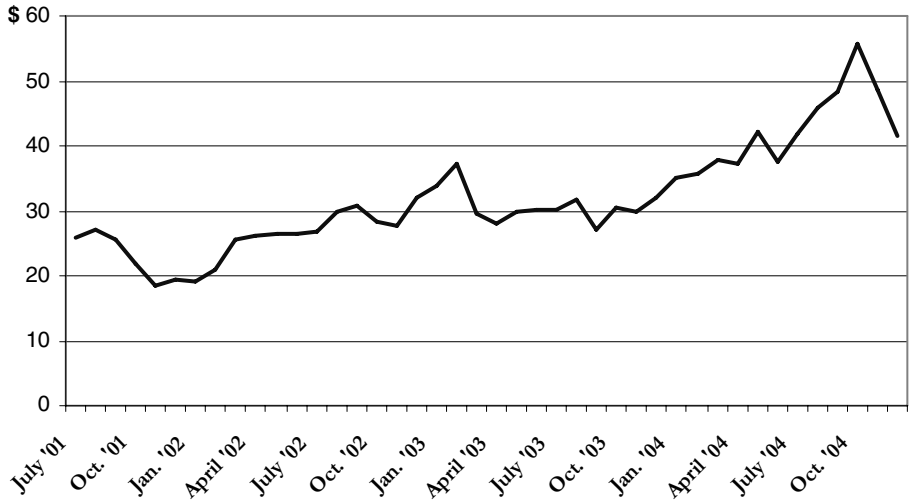
Table 3: Government Security Expenditures, 2000-2004

Year	Military Spending, Billions	%chg.	Homeland Security, Billions	%chg.
2000	281.2	—	13.1	—
2001	291.0	3.5%	15.0	14.5%
2002	331.9	14.1%	17.6	17.3%
2003	388.9	17.2%	32.0	81.8%
2004	435.7	12.0%	30.6	-4.4%

Examining the last three years, military expenditures increased by 14.1% in 2002, by 17.2% in 2003, and by 12.0% this year. Homeland security expenditures increased by 17.3% in 2002, by 81.8% in 2003, and fell this year by 4.4%, though the total expenditure is still more than double the pre-9/11 budget. Though these expenditures are counted as part of GDP, the threat of terrorism they indicate is a deterrent to productive activity and reduces economic growth.

The Middle East is the main locus of the current war on terror and threats of terror. Because this region is a major supplier of crude oil, the price of crude oil is not independent of terrorism. Figure 2 shows the path of the per barrel price of crude oil.

Figure 2: Spot Price per Barrel of Crude Oil



During 2002, the price of crude rose steadily roughly from $20 per barrel to $30. The price was reasonably stable during 2003 at around $30 per barrel. There were fairly sizable increases during 2004, rising to $35 early in the year, to $40 by mid-year, and peaking at around $55 in October. Recently, the price has dropped back below $50 per barrel.

A higher price of oil also is like a negative supply shock. The more that is spent on oil means that there is less to produce other goods and services. Naturally, this is not conducive to the profitability of firms, investment, and hiring.

The higher price of oil is reflected in the Consumer Price Index (CPI) for energy. Column 1 of Table 4 shows the October-to-October annual percentage increase for energy in the CPI.

While there was only a 3.0% increase in energy prices from October 2001 to October 2002, the 2002 to 2003 increase was 8.8% and the 2003 to 2004 increase was 15.2%. Despite this, the overall rate of inflation has remained modest. Column 2 of Table 4 shows the increases in the overall CPI. The 2001 to 2002 and the 2002 to 2003 overall increases in prices were 2.0% and the CPI rose by 3.2% for 2003 to 2004. Though the rate of inflation has increased, it remains low. This conclusion is reinforced by looking at the rate of change in the CPI, less food and energy. This is shown in the last column of Table 4. The October-to-October changes over the last three years have been only 2.2%, 1.2%, and 2.0%.

Table 4: Consumer Price Index, % Change

Year	Energy	All	All Less Food & Energy
01-'02	3.0%	2.0%	2.2%
02-'03	8.8%	2.0%	1.2%
03-'04	15.2%	3.2%	2.0%

Monetary Policy

Since 2001, the Federal Reserve Board (Fed) has engaged in expansionary monetary policy. It does so through open market operations in the market for U.S. Treasury securities. The Fed buys or sells securities to alter the federal funds rate to attain the Fed's target rate. The federal funds rate is the interest

rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight.

In January of 2001, the Fed's target for the federal funds rate was 6.00%. The Fed steadily lowered its target rate (by engaging in expansionary monetary policy) throughout the first half of that year. By the end of June 2001, the rate stood at 4.00%. The Fed continued to lower its target in 2001, so that the rate was 1.75% at the end of that year.

The target rate remained there until November of 2002, when the Fed reduced it to 1.25%. The next change occurred in June of 2003 when the Fed targeted an even lower rate of 1.00%. In 2004, the Fed began tightening. It increased its target rate to 1.25% in June, to 1.50% in August, to 1.75% in September, and to 2.00% in November.

The Fed maintained a long spell of expansionary monetary policy apparently in response to a stubborn and drawn out recovery. The current tightening suggests that the Fed anticipates that the recovery will continue to take hold and does not wish to kindle inflation.

The pattern of monetary policy at least partly explains the fall and rise of interest rates during this recovery period. The 3-month Treasury bill yield fell from the 4.5% range in mid-2001 to around 1% in mid-2004, before increasing recently to about 2.0%. The 10-year Treasury note yield fell from slightly over 5% in mid-2001 to a little under 4% in late-2003. It has since risen to somewhat over 4%.

Fiscal Policy

Federal government expenditure has grown substantially over the last several years and tax revenue has, until recently, declined. This is shown is Table 5. The first two columns show that government spending grew at rates of 7.3%, 7.8%, and 6.3% for 2002, 2003, and 2004, respectively. With inflation running approximately two to three percent, these are substantial real increases. The increase in spending is not just due to increased military and homeland security spending. The next two columns of Table 5 show spending with those two categories omitted. It still shows increases of 6.0%, 5.2%, and 5.2% for the years 2002, 2003, and 2004. The next two columns of Table 5 show the decline in tax revenue and the final column shows the consequent rise in the federal deficit.

Big deficit spending is the traditional Keynsian prescription for a recovery. However, it does not seem to have worked to induce a speedy recovery in this instance. Indeed, the traditional Keynesian model implies rising interest rates with rising deficits, and this has not occurred, though the Fed's expansionary policy has been accommodating in this regard. The simple Keynesian model has difficulties explaining the behavior of the economy, but this has been noted by the economics profession for a long time.

A more fundamental issue involving the size of government is that government purchases of goods and services use resources that displace private production. While many functions of government are important, government becomes a burden when the value of the goods provided by the government is less than those displaced in the private sector, slowing real economic growth. As government expenditure expands, the potential for this happening probably rises. Thus, substantial increases in government expenditures are a potential cause for concern regarding economic growth.

In conclusion, terrorism and oil prices are prime candidates for the somewhat slow and late-in-coming recovery from the most recent recession. Monetary policy has been expansionary, driving interest rates low, but it apparently has not been enough to hasten the recovery. Fiscal policy, too, has been tremendously expansionary in the traditional Keynesian sense, seemingly to little effect. Modern

Table 5: Government Expenditures and Revenues, 2000-2004

	Expenditures (Billions)	%chg.	Non-Security Expenditures (Billions)	%chg.	Revenues (Billions)	%chg.	Surplus/ Deficit (Billions)
2000	1,789	—	1,495	—	2,025	—	236
2001	1,864	4.2%	1,558	4.2%	1,991	-1.7%	127
2002	2,001	7.3%	1,652	6.0%	1,853	-6.9%	-148
2003	2,158	7.8%	1,737	5.2%	1,782	-3.8%	-376
2004	2,293	6.3%	1,827	5.2%	1,871	5.0%	-422

economic analysis is not so optimistic about the stimulative effects of deficits and a concern with rapidly growing government expenditure is the potential for wasteful spending, which is an impediment to economic growth.

IV. The National Outlook

The outlook for the remainder of 2004 and for 2005 is reasonably strong. GDP has been growing steadily and at a strong rate for over a year. Job growth has been good for the past three quarters. The continuing increase in crude oil prices looks to be behind us. The price of crude oil has fallen through November 2004 and as of early December is around $41 dollars per barrel. The market apparently believes prices will fall further: as of this writing, the one year futures price of a barrel of crude is around $40. The rapid rate of increase in homeland security expenditures is over which hopefully means a good security infrastructure is in place. Inflation remains under control and the Fed is expected to continue to keep it contained.

With these facts in mind, the forecast is reasonably good. A strong fourth quarter is anticipated for 2004 and overall GDP growth for the year is expected to be around 4%. Growth for 2005 is expected to be somewhat lower as the economy begins to return to its long run growth path. A 3.7% growth in real GDP for 2005 is forecasted. Inflation is expected to finish at 2.6% this year and be lower in 2005 at 2.0%. Payroll employment for 2004 is forecasted to be up by 1.6% to be followed in 2005 by the same percent increase. The yearly unemployment rate for 2004 is expected to be 5.5% and to decline somewhat to 5.3% for 2005. The 3-month Treasury bill yield is presently around 2.0% and is expected to increase to approximately 3.0% for 2005. The 10-year Treasury note yield currently is about 4.2%. This is expected to rise to the 5.0% to 5.5% range for 2005. These increases will move the yields more in line with their long run averages. Naturally, dramatic world events and unexpected policy changes will alter the forecast.

V. The Kentucky Economy

The Kentucky economy is quite reflective of the U.S. economy, though not precisely so. Thus, it should not be surprising that the pattern of the recovery for Kentucky is similar to that for the U.S. Kentucky's economy in the past was substantially different from the U.S. economy, but long-term trends have brought some degree of convergence. Table 6 illustrates some examples of this. It shows the share of employment in farming, mining, manufacturing, and services for the U.S. economy and the Kentucky economy for 1983 and 2003.

Table 6: Share of Total Employment

	U.S.		KY	
	1983	2003	1983	2003
Farm	3.3	1.9	9.1	4.8
Mining	1.2	0.5	3.1	1.0
Mfg.	16.3	11.4	15.3	14.1
Services	24.2	32.0	20.3	26.2

Kentucky's employment is much less dependent on farming and mining in 2003 compared to 1983 and is more reflective of the U.S. in these respects. The share of employment in the service sector has rapidly expanded both for the U.S. and for Kentucky, although Kentucky's is still lower. Interestingly, manufacturing's share of employment has declined for both the U.S. and Kentucky, but less so for Kentucky. In 1983, Kentucky's share of manufacturing employment was below the national average but is now above it.

With that as background, Table 7 shows quarterly percentage changes in payroll employment for the U.S and Kentucky for the eleven quarters past the

Table 7: Quarterly Percent Change in Employment Eleven Quarters Following the Recent Recession Trough

Year	Quarter	Total Employment US	Total Employment KY	Manufacturing Employment US	Manufacturing Employment KY
2002	I	-0.2	0.2	-1.7	-0.9
	II	0.0	0.0	-0.9	-1.0
	III	-0.1	-0.1	-1.1	-1.6
	IV	-0.1	0.1	-1.5	-0.4
2003	I	-0.1	-0.3	-1.2	-1.0
	II	0.0	-0.1	-1.4	-0.8
	III	0.0	0.1	-1.0	0.0
	IV	0.1	0.2	-0.4	0.4
2004	I	0.5	0.1	0.1	-0.1
	II	0.5	0.2	0.3	-0.5
	III	0.3	0.0	0.1	-0.3

most recent recessionary trough. This is shown both for total payroll employment and manufacturing employment. The pattern for total employment in Kentucky is similar to the U.S. in that employment growth was initially negative and became positive for the past several quarters. However, the drop in employment for Kentucky was not as sharp and the recent gains have not been as strong. A similar pattern holds for manufacturing employment. U.S. manufacturing employment fell more sharply in the initial quarters after the recessionary trough. However, in the most recent quarters U.S. manufacturing has begun to grow while in Kentucky it has not.

Table 8 shows the unemployment rate for the U.S. and for Kentucky during the post-recessionary period. Unfortunately, data for Kentucky for 2004 is not available.[2] However, as can be seen in Table 8, the unemployment rate for Kentucky tracks that of the U.S. very closely.

Table 8: Unemployment Eleven Quarters Following the Recent Recession Trough

Year	Quarter	US	KY
2002	I	5.7	5.5
	II	5.8	5.7
	III	5.7	5.5
	IV	5.9	5.7
2003	I	5.8	6.1
	II	6.1	6.2
	III	6.1	6.2
	IV	5.9	6.0
2004	I	5.6	NA
	II	5.6	NA
	III	5.5	NA
Avg.		5.8	5.9

Their levels are nearly the same and they tend to move together; the correlation coefficient between the two variables is .83. Thus, Kentucky's current unemployment rate is expected to be quite close to the 5.5% rate for the U.S. There is a wide variation in local area unemployment rates within Kentucky, though. For example, the December 2003 unemployment rate for Fayette County was 3.2%, for the Louisville MSA it was 4.9%, for Bath County it was 7.8%, and for Harlan County it was 9.4%.

Further indicators of the present state of the Kentucky economy are from the 2004 Business Confidence Survey. The Business Confidence Survey is a joint effort between the Associated Industries of Kentucky (AIK) and the University of Kentucky Center for Business and Economic Research (CBER). Its purpose is to determine manufacturers' assessment of their past year and their expectations for the coming year. The 2004 survey was done in the fall of this year. A summary of the findings is presented in Table 9. A more detailed overview of the findings are presented elsewhere in the annual report.

The first set of columns of Table 9 show the actual changes (decrease, no change, or increase) for manufacturers in Kentucky for the past twelve months.[3] The results indicate that manufacturers are still experiencing the effects of economic upturn following the 2001 recession. Over 64% of respondents report a rise in sales and more than 46% have increased employment. In addition, over 50% of manufacturing establishments report a rise in profits and 57% have increased capital expenditures over the last 12 months. However, despite these positive figures, a significant portion of businesses also report a decline in employment, sales, or profits. This means that during 2004 overall performance of the manufacturing sector in Kentucky was mixed. Around 22% of businesses report a decline in sales, 32% report a decline in profits, and nearly 24% a decline in employment. Also, 14%, 18%, and 29% of businesses report no change in sales, profits, and employment, respectively. These numbers indicate

Table 9: Fall 2004 Business Confidence Survey Results, Kentucky Manufacturers

	Past 12 Months			Next 12 Months		
	% Decrease	% No Change	% Increase	% Decrease	% No Change	%Increase
Employment	23.78	29.37	46.15	14.39	37.41	48.20
Sales	21.58	13.67	64.75	9.63	17.04	73.33
Profits	31.91	17.73	50.35	13.24	21.32	65.44
Capital Expenditures	14.08	28.87	57.04	14.60	31.39	54.01
Industry Production	24.29	23.57	52.14	12.95	33.81	53.24

large performance differences in the manufacturing sector over the past year. They also are consistent with the sporadic employment growth for overall Kentucky manufacturing employment shown in Table 7.

The last set of columns of Table 9 show the results for the 2005 expectations. Traditionally, the majority of businesses have been optimistic about the near future. While expectations for 2005 remain high as well, they are less uniform across the sample than in previous years. Over 73% of manufacturing establishments predict sales to increase during the following year and about 50% of businesses expect to increase employment and capital expenditures. Similarly, 53% of respondents predict a rise of output in their respective industries as well. However, between 13% and 14% of manufacturers expect a decline in employment, profits, capital expenditures, and industry production. Such double digit percentages for negative future expectations are highly unusual for this survey, indicating a more cautious assessment of the short-term future.

VI. The Kentucky Outlook

The unemployment rate in Kentucky is expected to remain about at the national rate. I predict that national unemployment rate falls from the October 2004 level of 5.5% to 5.3% for 2005 and expect a similar 0.2 decline in Kentucky's unemployment rate.

Employment nationally is expected to grow by 1.6%. Employment in Kentucky tracks national employment trends closely, but not exactly. A simple regression analysis showing the relationship of Kentucky employment to national unemployment and the national unemployment rate indicates that Kentucky employment will grow by 1.3% for 2005.

The forecast for manufacturing employment involves assessing two offsetting factors. The first is that the overall economic recovery will lead to increased manufacturing employment. The second is that the long, secular decline in manufacturing will continue and cause reductions in employment in the manufacturing sector. For 2005, the former influence is expected to be somewhat stronger than the latter nationally, leading to an increase of 0.5% in manufacturing employment for the U.S. However, given the net manufacturing job loss for Kentucky in 2004, a less rosy outcome is expected for Kentucky in 2005. This is reinforced by the lower level of optimism for 2005 from the Business Confidence Survey. I do expect that job loss in manufacturing will slow in Kentucky for 2005 and perhaps recover somewhat so that there is no net change in manufacturing employment for 2005.

VII. Conclusion

Though GDP growth during this recovery has been fairly strong, employment growth has been sluggish and has occurred later than in previous recessions. While employment normally recovers more slowly than GDP, the recent experience is slower than normal. This perhaps is due to the drag on the economy of higher oil prices and the increased resources devoted to dealing with terrorism. However, recent employment gains are reasonably strong and I expect these gains to continue through 2005. Thus, it should be a good year. The Kentucky economy will follow along, although expected gains in manufacturing employment will not be as strong as nationally. Table 10 provides a summary of the 2005 forecast.

Table 10: Summary of 2005 Forecast

Variable	2005 Forecast
U.S. GDP Growth	3.7%
Inflation	2.0%
Employment Growth, U.S.	1.6%
Employment Growth, Kentucky	1.3%
Mfg. Employment Growth, U.S.	0.5%
Mfg. Employment Growth, Kentucky	0.0%
Unemployment Rate, U.S.	5.3%
Unemployment Rate, Kentucky	5.3%
3-month Treasury yield	3.0%
10-year Treasury yield	5.0 – 5.5%

Endnotes

1 Final expenditure for the year 2004 is an estimate.

2 The Bureau of Labor Statistics (BLS) produces data on unemployment rates by states and localities with adjustment for potential unreliability because of small samples in some areas. The adjusted data for 2004 are not yet available.

3 This is among survey respondents. I thank Vladyslav Sushko for putting together these findings.

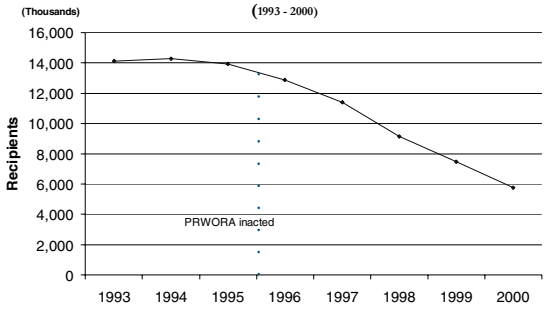
Welfare Reform and Program Participation

William Hoyt and Frank Scott

We examine changes in participation in welfare (AFDC before 1996 and TANF after it) from 1995 to 2001 a period coinciding with welfare reform, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. In addition, we examine how participation in two other important transfer programs, Food Stamps and Supplemental Security Income (SSI) changes during the period. We find large and fairly uniform reductions in welfare participation from 1995 to 2001 throughout the state. Reductions in Food Stamps are smaller and less uniform. While SSI participation decreased in some regions of the state, it increased in other regions with changes in SSI participation negatively related to changes in Welfare participation, that is, those counties with the greatest reductions in Welfare participation had the largest increases (smallest decreases) in SSI participation

In 1996, Congress passed and President Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA). This act of welfare reform ended the Aid to Families with Dependent Children (AFDC) program and created the Temporary Assistance to Needy Families (TANF) program. While a number of states through the use of waivers in *AFDC* were already implementing some of the key policies associated with *TANF*, including work requirements, *TANF* in many respects represented a significant departure from *AFDC*. The key distinctions between the two programs for recipients include time limits on the length benefits can be received (five years under *TANF* vs. no limit as long as recipients were eligible under *AFDC)* and a work requirement under *TANF*. For the states, *AFDC* was an entitlement with federal funding linked to state caseloads based on a matching rate. In contrast, with *TANF*, funding comes as a block grant from the federal government which, with a few exceptions, is independent of the number of *TANF* cases.[1]

Figure 1: Reduction in Welfare Recipients for U.S. (1993 - 2000)



Dramatic reductions have occurred in welfare caseloads since welfare reform. This can be seen for U.S. recipients in *Figure 1* and in *Table 1* for caseloads (families) in Kentucky and the rest of the U.S. Kentucky's reduction in caseloads mirrors the nationwide decrease. While the reduction in caseloads is well documented, it is less clear why these reductions have occurred. Was it due to welfare reform, specifically the time limits or work requirements, or was it other factors, most prominently the steady growth in the economy in the late 1990s *Table 2* summarizes the results of several academic studies and two studies by the Council of Economic Advisors that attempt to determine what factors were responsible for the decline in caseloads. While this

Table 2: Factors Impacting Post-Welfare Reform Reductions in TANF Caseloads

Explanatory Factor	CEA (1997)	Ziliak et. al. (2000)	Figlio & Ziliak (1999)	Wallace & Blank (1999)	Moffitt (1999)	CEA (1999)
Economy	44.10%	78.0	75.5	47.4	47.0	26.4
Welfare Reform	30.9	6.0	-2.5	21.5	15.0	14.6
Other	25.0	16.0	27.0	31.1	38.0	59.0

Source: Minnesota Department of Human Services (January 2002, Issue 6), "AFDC-TANF Caseload Decline, 1993-1996: A Summary of the Explanations," *Evaluation Notes*.

Table 1: Change in AFDC/TANF Caseloads (families) 1993 to 2000

Total TANF families and recipients (in thousands)

STATE	Jan-93	Jan-94	Jan-95	Jan-96	Jan-97	Jan-98	Jan-99	Jun-00	(93-00)
Families	4,963	5,053	4,963	4,628	4,114	3,305	2,734	2,208	-56%
			2,755,000 fewer families						
Recipients	14,115	14,276	13,931	12,877	11,423	9,132	7,455	5,781	-59%
			8,334,000 fewer recipients						

Total TANF families by State

STATE	Jan-93	Jan-94	Jan-95	Jan-96	Jan-97	Jan-98	Jan-99	Jun-00	(93-00)
Alabama	51,910	51,181	47,376	43,396	37,972	25,123	20,505	18,677	-64%
Alaska	11,626	12,578	12,518	11,979	12,224	10,392	8,756	7,542	-35%
Arizona	68,982	72,160	71,110	64,442	56,250	41,233	34,055	31,897	-54%
Arkansas	26,897	26,398	24,930	23,140	21,549	14,419	12,057	12,046	-55%
California	844,494	902,900	925,585	904,940	839,860	727,695	639,059	489,054	-42%
Colorado	42,445	41,616	39,115	35,661	31,288	21,912	14,988	10,772	-75%
Connecticut	56,759	58,453	60,927	58,124	56,095	51,132	35,481	27,149	-52%
Delaware	11,315	11,739	11,306	10,266	10,104	7,053	6,390	5,819	-49%
Dist. of Col.	24,628	26,624	26,624	25,717	24,752	22,451	19,548	22,397	-9%
Florida	256,145	254,032	241,193	215,512	182,075	121,006	89,674	62,805	-75%
Georgia	142,040	142,459	141,284	135,274	115,490	84,318	66,070	51,215	-64%
Guam	1,406	1,840	2,124	2,097	2,349	2,213	2,423	2,760	96%
Hawaii	17,869	20,104	21,523	22,075	21,469	23,578	16,247	14,942	-16%
Idaho	7,838	8,677	9,097	9,211	7,922	1,920	1,468	1,382	-82%
Illinois	229,308	238,967	240,013	225,796	206,316	175,445	130,393	85,807	-63%
Indiana	73,115	74,169	68,195	52,254	46,215	37,298	35,544	35,068	-52%
Iowa	36,515	39,623	37,298	33,559	28,931	25,744	22,322	20,082	-45%
Kansas	29,818	30,247	28,770	25,811	21,732	14,595	13,082	12,404	-58%
Kentucky	83,320	79,437	76,471	72,131	67,679	54,491	43,799	37,471	-55%
Louisiana	89,931	88,168	81,587	72,104	60,226	46,593	41,510	25,521	-72%
Maine	23,903	23,074	22,010	20,472	19,037	15,526	13,984	10,654	-55%
Maryland	80,256	79,772	81,115	75,573	61,730	49,075	36,142	28,895	-64%
Massachusetts	113,571	112,955	104,956	90,107	80,675	68,651	56,163	41,682	-63%
Michigan	228,377	225,671	207,089	180,790	156,077	128,892	97,398	70,897	-69%
Minnesota	63,995	63,552	61,373	58,510	54,608	48,893	43,094	39,295	-39%
Mississippi	60,520	57,689	53,104	49,185	40,919	25,510	17,954	14,979	-75%
Missouri	88,744	91,598	91,378	84,534	75,459	62,872	52,831	45,912	-48%
Montana	11,793	12,080	11,732	11,276	9,644	6,789	5,497	4,467	-62%
Nebraska	16,637	16,145	14,968	14,136	13,492	13,809	11,830	10,088	-39%
Nevada	12,892	14,077	16,039	15,824	11,742	11,263	8,538	6,916	-46%
New Hampshire	10,805	11,427	11,018	9,648	8,293	6,489	6,153	5,791	-46%
New Jersey	126,179	121,361	120,099	113,399	102,378	89,030	64,475	50,126	-60%
New Mexico	31,103	33,376	34,789	34,368	29,984	20,219	25,752	22,701	-27%
New York	428,191	449,978	461,006	437,694	393,424	347,536	297,016	248,148	-42%
North Carolina	128,946	131,288	127,069	114,449	103,300	78,473	63,234	44,731	-65%
North Dakota	6,577	6,002	5,374	4,976	4,416	3,351	3,099	2,887	-56%
Ohio	257,665	251,037	232,574	209,830	192,747	147,093	121,142	95,835	-63%
Oklahoma	50,955	47,475	45,936	40,692	32,942	25,860	21,916	7,251	-86%
Oregon	42,409	42,695	40,323	35,421	25,874	19,249	16,918	17,121	-60%
Pennsylvania	204,216	208,260	208,899	192,952	170,831	140,446	110,567	87,972	-57%
Puerto Rico	60,950	59,425	55,902	51,370	48,359	43,474	37,371	31,273	-49%
Rhode Island	21,900	22,592	22,559	21,775	20,112	19,242	18,170	16,324	-25%
South Carolina	54,599	53,178	50,389	46,772	37,342	27,514	18,969	15,496	-72%
South Dakota	7,262	7,027	6,482	6,189	5,324	3,956	3,422	2,789	-62%
Tennessee	112,159	111,946	105,948	100,884	74,820	53,837	57,608	55,491	-51%
Texas	279,002	285,680	279,911	265,233	228,882	158,252	119,765	128,289	-54%
Utah	18,606	18,063	17,195	15,072	12,864	10,931	10,125	8,157	-56%
Vermont	10,081	9,917	9,789	9,210	8,451	7,591	6,717	5,858	-42%
Virgin Islands	1,073	1,090	1,264	1,437	1,335	1,167	944	778	-27%
Virginia	73,446	74,717	73,920	66,244	56,018	44,247	37,706	30,078	-59%
Washington	100,568	103,068	103,179	99,395	95,982	82,852	64,493	54,768	-46%
West Virginia	41,525	40,869	39,231	36,674	36,805	18,914	11,471	10,661	-74%
Wisconsin	81,291	78,507	73,962	65,386	45,586	13,860	19,211	16,410	-80%
Wyoming	6,493	5,891	5,443	4,975	3,825	1,340	886	565	-91%
U.S. Total	4,963,050	5,052,854	4,963,071	4,627,941	4,113,775	3,304,814	2,733,932	2,208,095	-56%

Note: Several states made changes in the definitions of their caseloads — California removed two-parent families, Texas added families enrolled during a month, Wisconsin added child only cases.*Source:U.S. Dept. of Health & Human Services*

summary of studies (full citations in references) reveals considerable difference of opinion about the extent to which welfare reform contributed to the reduction in caseloads, there appears to be a consensus that economic conditions, more than programmatic reforms, were responsible for these reductions.

Purpose of the Study

Our objective in this report is not to explain why welfare caseloads fell in Kentucky. Nor do we attempt to characterize how caseloads and expenditures have changed with the advent of welfare reform, the topic of a recent study by Barber et. al. (2003). Instead, using a unique data set, we wish to document how the change in welfare caseloads has varied throughout Kentucky by focusing on how participation rates have changed between 1995 and 2001 in individual Kentucky counties and the fifteen Kentucky Area Development Districts. In this sense, our study updates and assesses an earlier study of the expected regional impacts of welfare reform (Hoyt and Toma, *1997*.)

In addition to examining how welfare (AFDC/TANF) enrollment has changed since welfare reform, we also investigate changes in Food Stamp and Supplemental Security Income (SSI) participation since 1995. That Food Stamp participation has also decreased since the advent of welfare reform is well-documented at the national and state level. Participation in SSI grew dramatically in the early 1990s, with this growth generally attributed to changes in eligibility. The SSI recipiency rate has decreased moderately in the early 2000s, though the absolute number of recipients has increased. We consider changes in participation rates in all three of these programs as well as employment rates for several reasons. First, we are interested in examining any regional differences in linkages between the reduction in welfare roles and changes in participation in Food Stamps and SSI. That participation in these programs may be linked has been the focus of a number of academic studies, including Ziliak (2004) who considers substitution between AFDC/TANF and SSI for individual recipients.

What happened to Program Participation in Kentucky after Welfare?

AFDC/TANF

Table 3 reports changes in participation rates in AFDC/TANF (cases per 1,000 households with children), Food Stamps (recipients per 1,000 residents), and SSI (recipients per 1,000 residents) for the fifty states from 1995 to 2001.[2] In addition, we report changes in the ratio of employment to population. Also provided is the state ranking for these changes in participation rates and employment measures. As the table shows, Kentucky's reduction in AFDC/TANF participation is about the same as the national average. However, Kentucky's reductions in Food Stamp and SSI participation are both significantly smaller than the national average.

In *Figure 2* we illustrate changes in AFDC/TANF participation at the county level on a map of all Kentucky counties. While no counties had increases in participation rates, the degree to which

Figure 2: Reduction in Welfare Participation

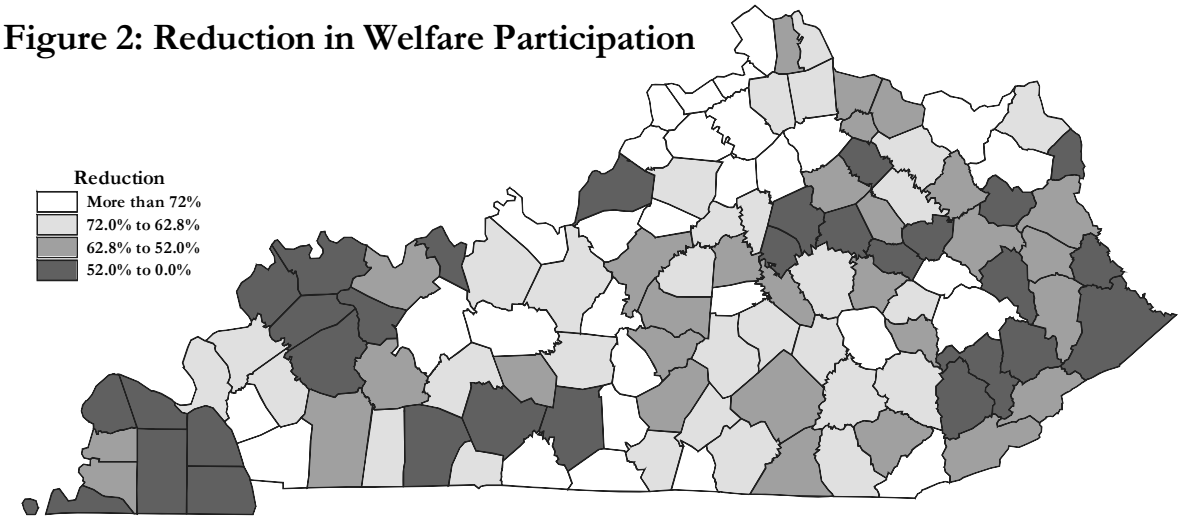
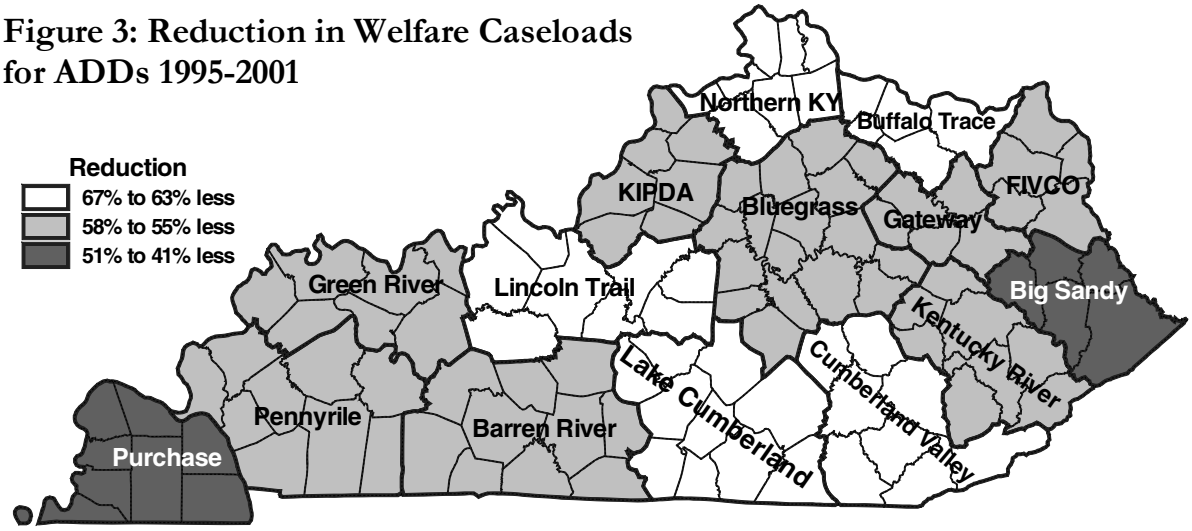


Table 3: Changes in Program Participation and Employment, 1995 - 2001, By State

State	Welfare Cases per 1,000 with Children		Food Stamp Recipients per 1,000		Employment per 1,000 Residents Ages 20-64		SSI Recipients per 1,000		SSI Recipients under 18 per 1,000		SSI Recipients between 18 to 64 per 1,000		SSI Recipients over 64 per 1,000	
	% Change	Rank	% Change	Rank	% Change	Rank	% Change	Rank	% Change	Rank	% Change	Rank	% Change	Rank
U.S.	-56.6		-38.1		5.3		-5.4		-21.8		2.0		-7.7	
Kentucky	**-54.3**	**15**	**-21.2**	**8**	**2.9**	**40**	**-1.0**	**12**	**-9.7**	**7**	**4.2**	**22**	**-11.8**	**26**
Alabama	-60.4	22	-23.6	10	1.7	45	-7.1	33	-22.5	24	7.8	8	-23.9	47
Arizona			-46.6	44	7.9	3	-5.8	27	-15.4	13	1.4	34	-4.4	11
Arkansas	-41.2	5	-12.8	2	0.0	49	-14.5	47	-33.1	44	0.6	38	-25.8	48
California	-49.0	10	-51.0	49	7.3	8	-2.8	18	-4.0	4	-1.5	42	-0.3	7
Colorado	-72.9	36	-46.4	43	8.2	2	-19.4	49	-44.9	49	-12.0	49	-10.2	21
Connecticut	-65.5	29	-31.7	20	5.5	21	4.5	5	-10.4	8	9.6	6	1.6	4
Delaware	-	-	-49.8	47	7.1	10	-1.8	14	-13.0	12	8.8	7	-15.4	35
District of Columbia	-68.0	33	-18.9	6	3.5	37	-0.3	10	5.1	1	3.6	26	-12.8	30
Florida	-77.9	38	-43.6	40	7.1	9	-2.4	15	-7.2	5	7.0	11	-6.5	15
Georgia	-63.9	26	-38.5	34	3.5	36	-13.8	46	-19.1	20	-3.7	44	-20.6	43
Idaho	-87.3	40	-34.8	29	5.2	27	-3.3	20	-24.3	26	6.4	14	-8.4	19
Illinois	-75.0	37	-29.4	19	3.9	34	-10.8	41	-27.9	32	-8.4	47	-1.6	8
Indiana	-44.5	7	-21.3	9	2.3	42	-6.0	28	-25.0	27	2.7	27	-13.4	32
Iowa	-47.4	9	-31.8	21	4.1	33	-5.0	25	-29.5	38	4.2	24	-14.6	34
Kansas	-54.3	14	-32.9	24	6.2	15	-7.8	36	-35.9	47	2.4	31	-7.2	16
Louisiana	-66.7	31	-25.9	15	5.4	23	-10.6	40	-33.6	46	1.3	35	-19.8	40
Maine	-100.0	41	-23.8	11	7.7	5	5.1	4	-0.9	3	12.8	3	-17.5	36
Maryland	-56.5	18	-48.4	45	7.4	6	-0.6	11	-11.6	10	7.7	9	-7.6	17
Massachusetts	-59.2	21	-44.4	42	7.8	4	-3.3	19	-18.9	19	1.0	36	-3.6	10
Michigan	-63.2	25	-35.1	30	3.5	35	-4.6	24	-25.9	29	2.5	28	-8.1	18
Minnesota	-41.3	6	-38.4	33	4.2	31	-4.0	22	-32.8	43	4.5	21	0.2	5
Mississippi	-69.7	35	-40.3	36	0.5	48	-13.1	43	-28.3	35	-1.5	41	-22.7	45
Missouri	-46.5	8	-24.0	12	2.8	41	-6.7	32	-29.3	37	5.1	16	-18.7	39
Montana	-55.3	16	-16.7	5	5.9	18	-2.7	17	-28.0	33	5.0	18	-13.5	33
Nebraska	-16.8	1	-24.6	13	5.3	25	-4.5	23	-31.3	39	6.5	13	-12.4	28
Nevada	-68.1	34	-49.4	46	7.1	11	-5.4	26	-8.7	6	3.7	25	-4.8	13
New Hampshire	-20.1	2	-40.1	35	7.4	7	-0.2	8	-26.7	30	11.4	5	-11.9	27
New Jersey	-67.7	32	-43.9	41	5.4	24	-3.5	21	-21.4	22	2.4	29	-1.8	9
New Mexico	-	-	-34.5	28	2.0	44	-1.8	13	-23.9	25	6.3	15	-10.7	24
New York	-56.1	17	-37.0	32	5.5	20	-0.2	9	-28.7	36	7.5	10	-0.2	6
North Carolina	-64.7	28	-28.7	18	1.4	47	-11.9	42	-19.8	21	0.0	39	-21.2	44
North Dakota	-31.1	3	-8.8	1	6.4	14	-6.2	29	-32.3	42	2.4	30	-18.0	38
Ohio	-62.0	24	-42.7	38	4.9	29	-6.4	31	-32.3	41	2.1	33	-9.0	20
Oklahoma	-	-	-32.6	23	5.8	19	-7.5	34	-21.5	23	4.8	19	-22.9	46
Oregon	-54.2	13	-16.4	4	3.3	38	2.9	6	-12.1	11	6.8	12	4.8	2
Pennsylvania	-59.0	20	-34.3	27	6.8	13	8.1	2	-11.4	9	17.8	1	-5.3	14
Rhode Island	-32.3	4	-25.0	14	5.1	28	8.9	1	0.9	2	16.4	2	1.8	3
South Carolina	-65.7	30	-21.0	7	2.2	43	-10.3	39	-18.6	18	2.2	32	-26.0	49
South Dakota	-54.0	12	-13.9	3	5.2	26	-9.9	38	-33.5	45	-2.8	43	-10.6	23
Tennessee	-	-	-26.1	16	1.5	46	-16.0	48	-27.3	31	-10.8	48	-20.4	42
Texas	-56.8	19	-50.9	48	6.2	16	-8.6	37	-18.3	17	0.8	37	-10.3	22
Utah	-52.8	11	-36.8	31	5.4	22	-13.2	44	-31.5	40	-8.1	46	-4.6	12
Vermont	-	-	-34.2	26	6.8	12	-6.3	30	-16.6	15	-0.5	40	-20.0	41
Virginia	-60.5	23	-43.4	39	8.5	1	-7.7	35	-28.0	34	4.2	23	-13.4	31
Washington	-64.6	27	-41.6	37	4.6	30	1.0	7	-17.5	16	4.6	20	6.5	1
West Virginia	-	-	-26.3	17	3.3	39	6.0	3	-15.9	14	11.9	4	-11.4	25
Wisconsin	-84.1	39	-32.5	22	4.1	32	-13.4	45	-39.0	48	-3.9	45	-12.6	29
Wyoming	-	-	-33.1	25	6.0	17	-2.7	16	-25.9	28	5.0	17	-17.9	37

Figure 3: Reduction in Welfare Caseloads for ADDs 1995-2001



participation in counties decreased varied significantly among the counties. *Table 4a* lists the counties with the least percentage decreases in participation and *Table 4b* lists the counties with the greatest percentage decreases in participation.

It is also informative to examine changes in participation rates in AFDC/TANF based on Area Development Districts (ADD) rather than counties. *Figure 3* illustrates the fifteen Kentucky ADDs. The first two columns of *Table 7* list the percentage change in AFDC/TANF cases (per 1,000 households with children) and the rank of the Area Development District. While comparison of *Figure 2* and *Table 7* suggests that participation rates within ADDs vary significantly, viewing the ADD makes it easier to see general patterns in changes in participation. Despite very different participation rates in AFDC among ADD's in 1995, as shown in *Table 7*, the similarity, in percentage terms, of the reduction in AFDC/TANF recipients among the ADD's is striking. While some of the greatest reductions in recipiency, exceeding 60%, occurred in the Eastern and Southeastern Kentucky ADD's of Buffalo Trace, Cumberland Valley, and Lake Cumberland, similar rates were found in the Northern Kentucky ADD encompassing some of the metropolitan counties belonging to the Cincinnati MSA. The ADD encompassing the Louisville MSA (KIPDA) and the Lexington MSA

Table 7: Program Participation Rates by Area Development District and Employment/Population Ratio

	AFDC/TANF				FOOD STAMPS				SSI				Employees per 1,000 Residents			
	% Change 95-01	Rank	Participation Rate per 1,000 1995	Rank	% Change 95-01	Rank	Participation Rate per 1,000 1995	Rank	% Change 95-01	Rank	Participation Rate per 1,000 1995	Rank	% Change 95-01	Rank	1995	Rank
Barren River	-57.4	7	36	11	-2.9	3	105	10	0.5	6	43	8	-11.14	13	611	3
Big Sandy	-51.2	2	89	3	-2.7	2	245	3	14.2	1	75	4	2.24	3	379	14
Bluegrass	-57.4	6	32	13	-20.7	13	89	14	-10.0	15	35	10	-11.90	14	682	1
Buffalo Trace	-66.3	12	49	7	-2.4	1	148	7	-5.2	10	55	6	-3.81	9	517	8
Cumberland Valley	-67.1	13	92	2	-14.5	7	263	2	5.6	3	93	2	-2.76	7	404	13
FIVCO	-58.3	10	57	5	-10.5	6	172	6	5.2	4	54	7	-4.12	11	459	12
Gateway	-57.9	8	57	4	-20.6	12	184	4	-7.1	13	68	5	-22.22	15	527	7
Green River	-58.0	9	38	10	-16.2	10	116	9	-5.7	11	34	12	-0.34	4	544	6
KIPDA	-55.8	3	42	8	-16.1	9	89	13	-5.1	9	26	14	2.83	2	656	2
Kentucky River	-56.8	4	116	1	-10.3	5	330	1	4.9	5	115	1	-1.79	6	348	15
Lake Cumberland	-63.5	11	50	6	-14.7	8	174	5	7.2	2	77	3	-4.10	10	510	10
Lincoln Trail	-67.6	15	34	12	-25.9	15	103	11	-0.9	7	35	11	-3.05	8	512	9
Northern KY	-67.3	14	31	15	-23.5	14	80	15	-8.2	14	23	15	9.22	1	505	11
Pennyrile	-57.1	5	38	9	-17.8	11	117	8	-5.7	12	38	9	-4.29	12	582	5
Purchase	-41.7	1	32	14	-6.1	4	95	12	-2.1	8	32	13	-0.70	5	586	4

Table 4a: Least Decrease in Welfare Participation per County, 1995 - 2001, Percentage Change and Cases per 1,000 Households with Children

County	Percentage Change	Changes in Cases per 1,000 Households
McCracken	-36.4	-15.4
Calloway	-37.0	-7.8
Hopkins	-38.0	-17.7
Barren	-38.4	-11.5
Martin	-38.9	-58.9
Menifee	-42.2	-25.7
Elliott	-42.4	-47.8
Fulton	-42.8	-36.4
Jessamine	-43.5	-11.7
McLean	-44.3	-15.9

Table 4b: Greatest Decreases in Welfare Participation, 1995 - 2001, Percentage Change and Cases per 1,000 Households with Children

County	Percentage Change	Changes in Cases per 1,000 Households
Spencer	-90.7	-30.6
Owen	-89.4	-49.1
Franklin	-87.4	-27.6
Oldham	-85.1	-7.2
Bullitt	-83.8	-21.3
Carroll	-83.6	-36.7
Meade	-82.6	-18.3
Allen	-82.4	-21.0
Henry	-82.2	-38.9
Scott	-82.0	-27.8

(Bluegrass) had reductions of 55.8% and 57.4%, respectively. Only one ADD, Purchase in the southwestern tip of Kentucky had a reduction in rolls of less than 50%.

Food Stamps

Figure 4 illustrates the county-level changes in Food Stamp participation between 1995 and 2001 and *Tables 5a* and *5b* show the counties with the ten largest increases (smallest decreases) and largest decreases in Food Stamp participation. In general, changes in Food Stamp participation are much more modest than changes in welfare participation, as can be seen for the ADDs in *Table 7*. While the reductions in food stamp recipiency was much less than found for AFDC/TANF, as *Table 7* suggests there was more variation among ADD's in this reduction relative to that found for AFDC/TANF. Generally, those ADDs that had the greater reductions in AFDC/TANF participation also had the greater reductions in food stamps use as well. Geographically, ADD's in Eastern Kentucky (Big Sandy, Buffalo Trace, Kentucky River,

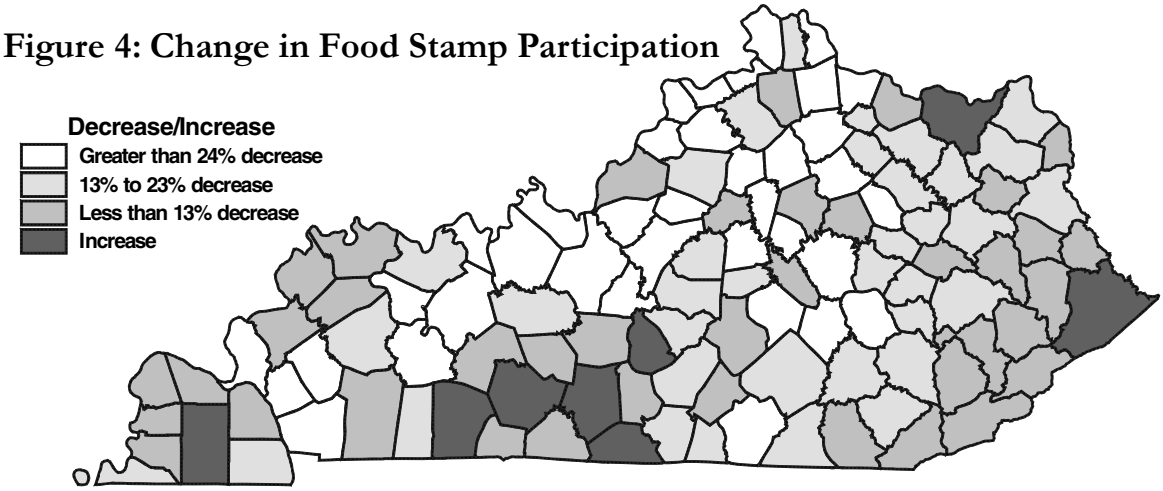
Table 5a: Greatest Increases (Smallest Decreases) in Food Stamp Participation per County, 1995 - 2001, Percentage Change and Recipients per 1,000

County	Percentage Change	Changes in Cases per 1,000
Lewis	17.1	33.4
Green	12.3	12.0
Graves	10.0	8.0
Barren	4.2	3.8
Pike	3.4	6.5
Logan	3.2	3.1
Warren	1.7	1.5
Monroe	0.0	-0.1
Russell	-0.6	-0.9
Hickman	-0.9	-0.9

Table 5b: Greatest Decreases in Food Stamp Participation per County, 1995 - 2001, Percentage Change and Recipients per 1,000

County	Percentage Change	Changes in Cases per 1,000
Spencer	-50.3	-52.8
Oldham	-40.9	-11.9
Boone	-39.2	-17.5
Woodford	-39.1	-23.4
Carroll	-36.4	-56.1
Meade	-36.2	-24.3
Scott	-35.3	-34.8
Jackson	-32.0	-96.6
Pendleton	-31.9	-40.4
Henry	-30.6	-.38.8

Figure 4: Change in Food Stamp Participation



FIVCO) and Southwestern Kentucky (Barren River, Pennyrile) had the smallest reductions while Northern Kentucky and Bluegrass had among the highest rates. Somewhat surprisingly, Gateway, another Eastern Kentucky ADD had one of the greatest reductions in food stamp recipiency, over 20%.

Supplemental Security Income (SSI)

Consideration of Supplemental Security Income *(SSI)* is particularly important for Kentucky for the simple reason that as documented in Hoyt and Scott (1996), Kentucky has several counties that have some of the highest recipiency rates for SSI in the nation. SSI was relatively untouched by welfare reform in 1996 and has seen few changes since early 1990s. Eligibility for SSI, though means-tested, also requires the existence of some disability limiting work for adults, or educational attainment handicap for children, or blindness, or being over the age of 65. These requirements suggest that recipiency rates for SSI may be less responsive to the factors affecting both AFDC/TANF and Food Stamp participation, particularly welfare reform.

In fact, as is apparent in *Table 7*, *Tables 6a* and *6b*, and *Figure 5*, only some ADDs and counties had reductions in SSI recipiency rates from 1995 to 2001. Note that in *Table 6a*, the counties with greatest increases in SSI were Pike, Floyd, and Pulaski, counties of Eastern and Southeastern Kentucky that have traditionally had some of the highest SSI participation rates in the country. This relationship is apparent when examining *Table 7*. The five ADDs

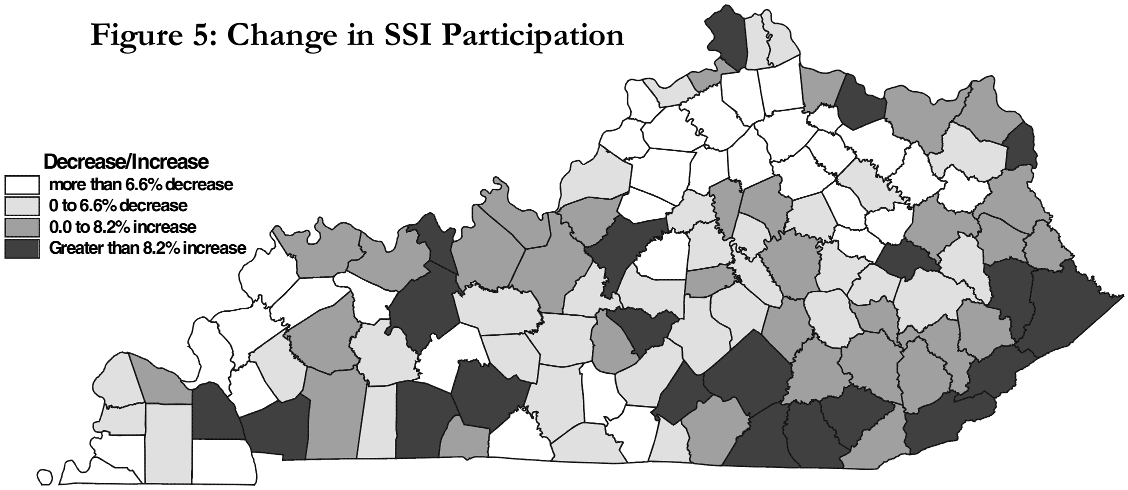
Table 6a: Greatest Increases in SSI Participation per County, 1995 - 2001, Percentage Change and Recipients per 1000

County	Percentage Change	Changes in Cases per 1,000
Pike	28.5	17.1
Floyd	24.2	18.3
Pulaski	24.2	14.0
Mason	19.6	6.7
Boyd	18.3	7.9
Hancock	17.9	4.2
Whitley	16.4	13.1
Warren	15.9	4.5
Ohio	15.1	5.7
Harlan	14.1	11.9

Table 6b: Greatest Decreases in SSI Participation per County, 1995 - 2001, Percentage Change and Recipients per 1,000

County	Percentage Change	Changes in Cases per 1,000
Robertson	-66.0	-94.7
Spencer	-64.8	-34.0
Lyon	-59.8	-35.3
McLean	-52.6	-33.2
Livingston	-45.9	-25.1
Union	-45.8	-20.8
Powell	-39.0	-46.6
Washington	-31.0	-21.2
Franklin	-27.2	-17.3
Webster	-27.0	-12.8

Figure 5: Change in SSI Participation



with the greatest percentage change in SSI are all among the top seven ADDs in terms of 1995 SSI recipiency rate. Thus in contrast to AFDC/TANF participation rates, there is a positive relationship between the change in SSI participation from 1995 to 2001 and the level of SSI participation in 1995 at the level of the ADD.[3]

Employment

All of the studies of welfare caseloads briefly discussed earlier suggest that the reductions in TANF caseloads in the mid and late 1990s is more attributable to growth in the economy than any incentive effects arising due to welfare reform. While any attempt at determining the relationship between reductions in welfare roles and growth in the Kentucky economy is beyond the scope of this report, we provide some description of how employment relative to population has changed in Kentucky from 1995 to 2001. As one employment measure we use the total employment in the county per 1,000 residents. There are two caveats regarding this measure. First, obviously basing a measure on all residents understates how many in the county are employed relative to those who could potentially be employed since this figure includes those under 18 and over 65 years of age. Second, total employment in the county does not measure the number of residents in the county who are employed but instead measures the number of people employed in the county. Thus counties that have a large net inflow of workers could have an employment ratio above 1,000. Counties with a large net outflow could have a very low figure even if unemployment among residents is low. This measure might be interpreted as an indication of opportunities for employment for county residents. Our other employment measure is the annual county unemployment rate as estimated by the U.S. Bureau of Labor Statistics for 1995 and 2001. *Figure 6* provides a map of the changes in the ratio of employment to population between 1995 and 2001.

Figure 6: Change in Ratio of Employment to Population

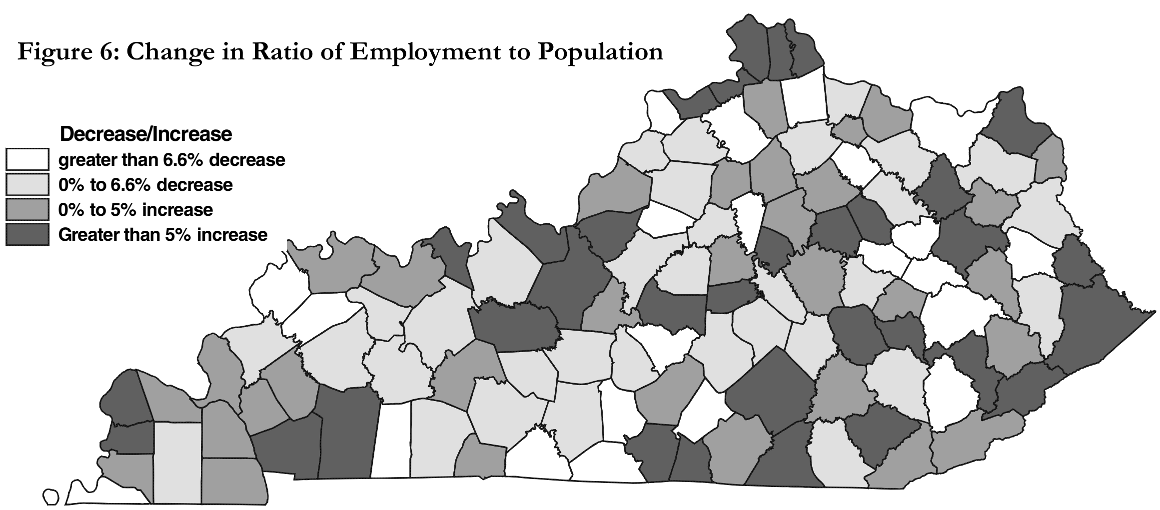


Table 8: Correlation between Changes in Program Participation and Changes in Employment Conditions

	Change in: Welfare	Food Stamps	SSI	Employment	Unemployment
Change in:					
Welfare	1.0				
Food Stamps	0.5767**	1.0			
SSI	-0.2129**	0.1017	1.0		
Employment	0.0866	-0.2290	0.0395	1.0	
Unemployment	0.2554	0.1302	-0.0815	-0.1563*	1.0

** significant at the 10% level*

*** significant at the 5% level*

Are the Changes in Program Participation and Employment Linked?

While studies of the decline in welfare roles that occurred in the late 1990s attribute much of the reduction to changes in economic conditions rather than to the programmatic changes that occurred with welfare reform, the majority of studies conclude that at least some of the reduction in welfare roles can be attributed to the change from AFDC to TANF. Our interest here is how has the change from AFDC to TANF affected participation in other programs, specifically, SSI and Food Stamps. If, for example, the reduction in welfare rolls in the 1990s was directly responsible for increases in SSI participation, then the effect of welfare reform on participation in means-tested government programs is overstated and some of the reduction is simply a movement by individuals and households from a program that now has more stringent requirements (time limit and work requirement) to a program that has not changed significantly in its requirements during the past six years.

While it has been suggested that changes in Food Stamp participation during this period may be in part due to misperceptions about the relationship between eligibility requirements for TANF and Food Stamps, such a link is unlikely to exist between TANF and SSI, since the application processes and eligibility requirements for these two programs are quite distinct.

Table 8 reports simple correlation coefficients for pairwise comparisons between the changes in program participation and changes in our measures of employment. While these simple correlations are informative, in themselves they do not suggest a causal relationship between any of these two measures. For example, the positive relationship between the *Change in Welfare Participation* and the *Change in Food Stamp Participation* might be due to the fact that both are positively correlated with changes in the unemployment rate. The * and ** adjacent to some of the estimated correlation coefficients refers to the degree of statistical significance of the estimate. In this case a correlation coefficient with * is significant at a 10% level and ** is significant at a 5% level.

From *Table 8* we see that while there is a positive, significant relationship between changes in Food Stamp participation and changes in Welfare participation, there is a negative and statistically significant relationship between changes in Welfare participation and SSI participation. That is, the counties with the greatest reductions in Welfare participation have the largest increases (smallest decreases) in SSI participation. Changes in the unemployment rate are, not surprisingly, positively correlated with changes in Welfare participation and food stamp participation, though not significantly.

While the significant negative correlation between changes in welfare rolls and changes in SSI participation may suggest some link between participation in these two programs, this correlation could simply be the result of changes in other factors that affect both programs, albeit in different ways. To examine this issue more carefully we estimate a model of the change in SSI participation where, in addition to including the change in Welfare participation, we also include changes in economic conditions (unemployment rates and poverty levels), disability rates, demographic characteristics of the county, and geographical considerations.[4] Even when controlling for these other factors that influence both SSI and AFDC/TANF participation we find a

statistically significant relationship between the change in participation in the two programs. We estimate that a decline of 10 welfare cases per 1,000 households would increase SSI recipients per 1,000 by 0.8. The median decline in AFDC/TANF cases per 1,000 households was 63 in Kentucky. The predicted increase in SSI participation as a result of reduction in AFDC/TANF participation is approximately 5 recipients. In 2001, the median participation rate for in SSI for Kentucky counties was approximately 45 recipients per 1,000. An increase of 5 recipients per 1,000 thus represents 11% of SSI recipients for the median county. While nowhere near the magnitude of the reductions in AFDC/TANF roles from 1995 to 2001, this increase is nontrivial.

In contrast, changes in AFDC/TANF participation were found to be insignificantly related to changes in SSI participation when, as with SSI, changes in economic and demographic factors were also considered in our estimation. Unsurprisingly, increases in both female unemployment and the fraction of female-headed households increased welfare participation. A change in the female unemployment rate of 4%, the maximum increase or decrease in any Kentucky county, results in a change in participation rate of 56 per thousand. The median decrease in female unemployment during this period was approximately 1% so that a reduction of 14 cases per 1,000 households can be attributed to the reduction in the female unemployment rate. This represents approximately 22% of the median decrease of 63 cases. While less than the magnitude of the reductions in caseloads due to economic conditions found in studies focused on state-level participation rates, this is only one measure of economic conditions and does not fully characterize economic conditions.

Conclusions

The tremendous reductions in welfare roles seen throughout the U.S. in the late 1990s were found in Kentucky as well. With a few exceptions and some variation, most counties within Kentucky had significant reductions in welfare rolls from 1995 to 2001. The regions of Kentucky with the highest participation rates in 1995 experienced not only the greatest absolute reductions in participation but also the greatest percentage decreases in participation rates. For the most part these counties are located in eastern and southeastern Kentucky. Reductions in Food Stamp recipiency also occurred. Unlike welfare, counties with the highest rates of food stamp participation in 1995 had more modest percentage decreases in participation.

While the SSI program was relatively unchanged by welfare reform, growth in the program has slowed significantly and, when adjusting for population, actually decreased slightly from 1995 to 2001. These changes in SSI were by no means uniform, as some counties, most notably those with already high recipiency rates, had significant increases during this time.

Endnotes

1 For a more detailed discussion of the distinctions between AFDC and TANF and its implications for Kentucky see Gail M. Hoyt and Melissa Lamb (1996) "Block Grants: Building Blocks for Welfare Reform in Kentucky?" *Kentucky Annual Economic Report, 1996.*

2 Caseload and recipient measures are based on the annual average of monthly caseloads or recipients.

3 While there is a statistically significant positive correlation for ADDs between the change in SSI participation and SSI participation in 1995, surprisingly there is no statistically significant correlation at the county level.

4 In fact, we estimate the change in participation in SSI with instrumental variables for the change in Welfare participation and Food Stamp participation. Instruments for these variables include the change in percentage of the population under the age of 20, the change in percentage of female headed households, and the change in households below the poverty level.

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Kentucky is Missing Lucrative Office Economy Growth

Paul Coomes

Over the previous decade the United States economy added on net over 17 million jobs, while losing over 3 million in the manufacturing sector. Much of the growth occurred in business and professional services sector, where jobs on average paid over $60,000 per year. These lucrative office economy jobs emerged primarily in large cities, where firms have access to other knowledge-based firms, good air connections, and university programs. Unfortunately, Kentucky captured relatively few of these jobs and its major cities are struggling to compete with their peers around the region and the nation. I examine here some of recent evidence on urban economic development and suggest that Kentucky state fiscal policies need to be modernized so the state can better participate at the high end of the service sector.

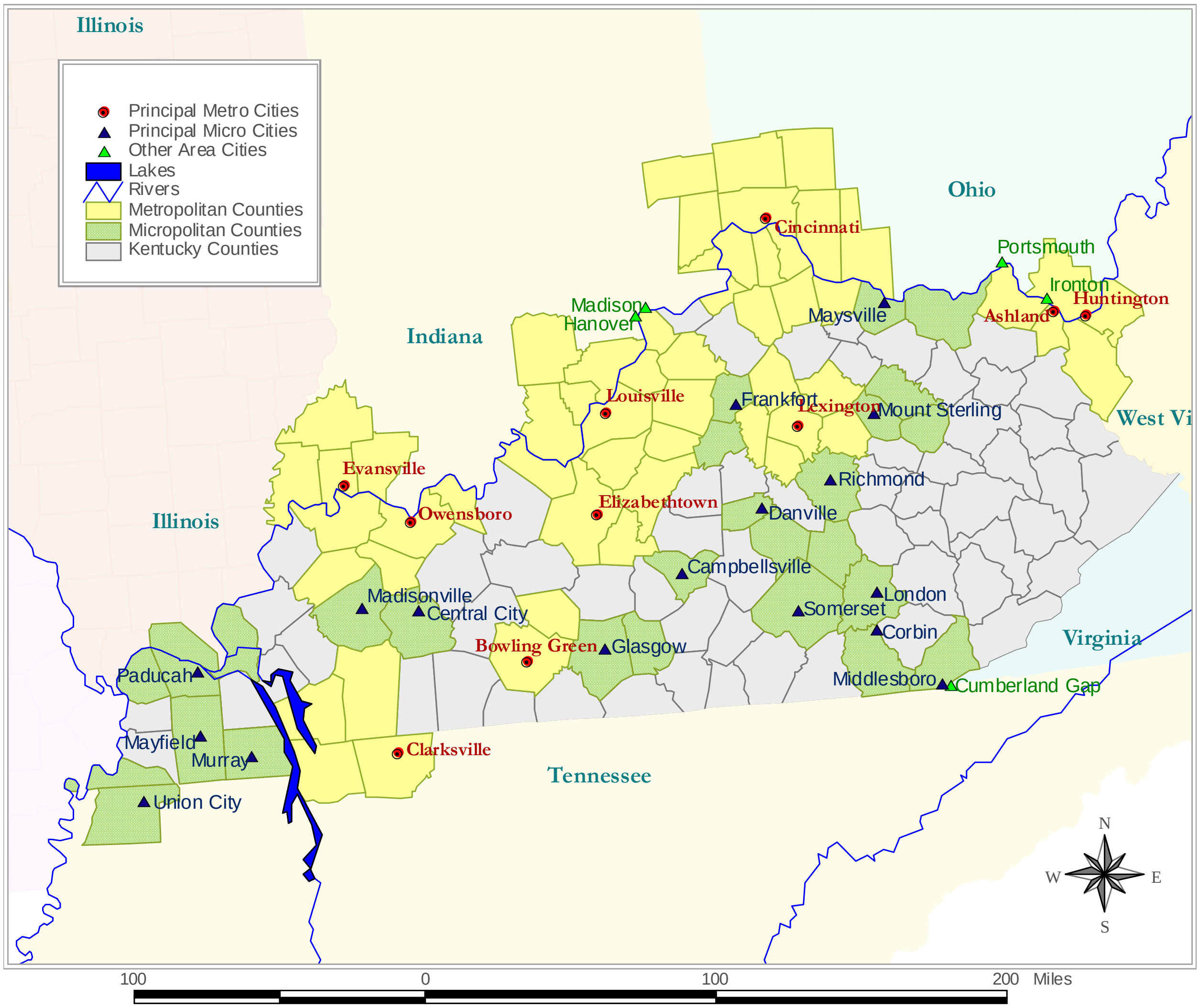
The economic landscape of Kentucky has been quietly changing. Most residents now either live or work in cities. The tax base is predominately urban, with but four counties now accounting for one-half of all private sector payrolls. But Kentucky is largely missing the benefits of the national growth in office industries, partly due to anachronistic state policies that reduce our cities' ability to compete for human capital and entrepreneurial talent. The result is relatively poor economic performance and low state rankings for key indicators like educational attainment, earnings per job, and per capita income. These are among the findings in our recently released study of Kentucky's fiscal policies[1]. In this article, I pull out some of the high level results of our study and try to connect the dots between state fiscal policy and regional economic competitiveness. Kentucky state spending policies continue to be geared to providing infrastructure and services to sparsely populated areas, a fifty-year economic development mission that is essentially complete and now dangerously close to creating a new entitlement culture. State tax policies continue to reflect the needs of legacy industries, not the opportunities of the booming knowledge and office industries. I argue that it a good time in Kentucky's economic history to move more public resources, authority and responsibility from the state to the local level, commensurate with a reduction in the state's top personal income tax rate.

Kentucky is now an urban state

We are beginning to recognize that Kentucky has become an urban state. Results from the 2000 Census indicate that over seventy percent of Kentucky's population live in counties one would characterize as urban, suburban, or exurban. While admittedly many of these residents live on multi-acre land parcels and do not consider themselves to be city dwellers, a closer examination reveals that most earn their living from participating in urban labor markets. Fast-growing counties, like Boone, Bullitt, Jessamine, Spencer, and Oldham are attracting young families who hold jobs in the Cincinnati, Louisville, or Lexington markets, but want to be able to purchase a large modern home unavailable at their income level in the central urban counties. Counting these suburbanites and exurbanites, a large majority of Kentuckians now live and/or work in cities.

The federal government recently revised the geographic definitions for metropolitan areas, and defined a new set of smaller population concentrations as "micropolitan". Kentucky gained two metropolitan areas – Elizabethtown and Bowling Green – for a total of nine metros containing 35 Kentucky counties. These metros are home to 2.4 million of the state's 4 million residents. Additionally, the federal government defined seventeen micropolitan areas containing another 26 Kentucky counties and 770,000 residents. Combined, these 61 metropolitan and micropolitan counties account for 3.1 million, or 75 percent of the state's population.

Kentucky and Surrounding States
Metropolitan and Micropolitan Counties 2003



Using U.S. Census Bureau definitions, *urbanized areas* are those with a population density of 1,000 persons per square mile, plus adjacent areas with a population density of greater than 500 persons per square mile. These calculations are made at the census block group level, a much finer geographic level than the county basis used in metro definitions. While the urbanized land area only accounts for 3.1 percent of Kentucky's land, the population living there accounts for 56 percent of all the state's residents. According to the 2000 Census, 2.3 million of Kentucky's 4 million residents live in *urbanized areas*.

Kentuckians are even more concentrated in their places of work. One-half of all private sector wages and salaries are earned in but four counties – Jefferson, Fayette, Boone and Kenton. Add in Warren, McCracken and Daviess counties, and one can account for one-half of all private sector jobs in the state. That is, a few places account for a majority of the state's tax base. These places include nearly all the state's office space, airport traffic, distribution centers, retail sales, hotels, arts, entertainment, sports, and media operations. These seven counties also account for 43 percent of the state's manufacturing payrolls.

Changing economic structure

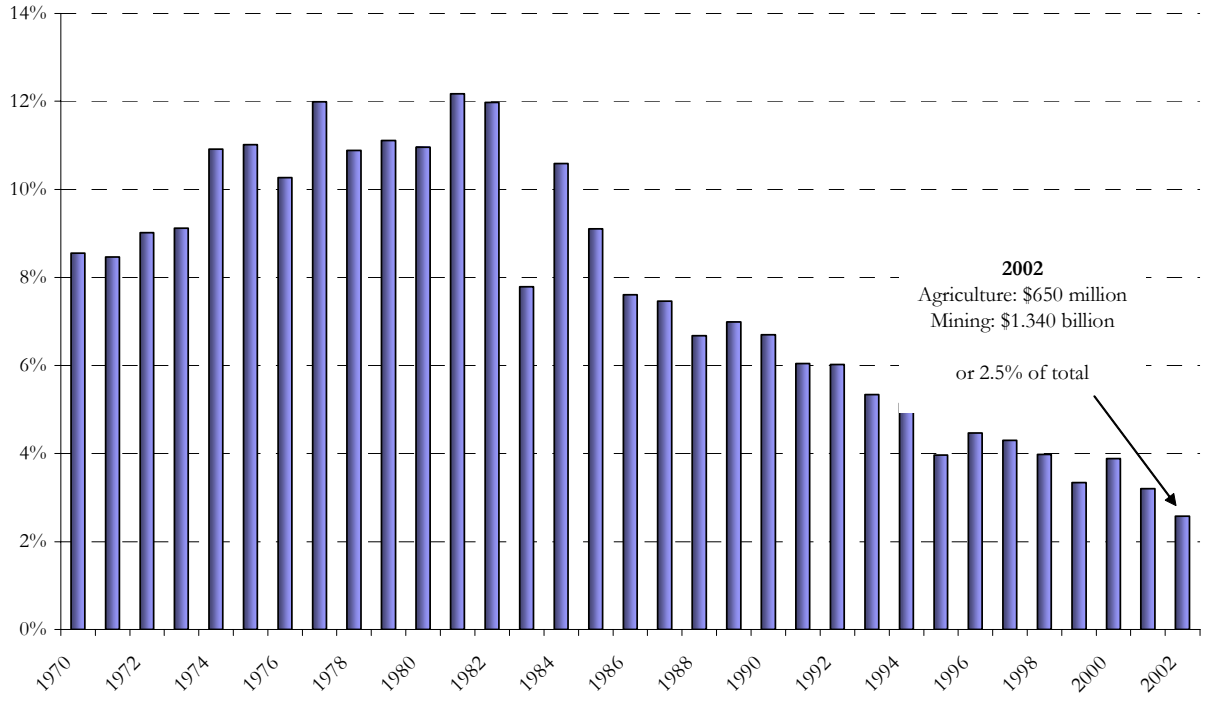
Simultaneous with the increased urbanization of Kentucky's population and tax base has been the decline in economic importance of traditional rural

industries like agriculture and mining. If one adds all the wages, salaries, and proprietors' income earned from tobacco, corn, soybeans, cattle, pigs, horses, chicken production and other farming, and add to that the income from coal, oil, and other mining in the state, it now amounts to only about 2.5 percent of the total from all industries. This is a continuation of a two-decade long trend. These farming and extraction industries remain important, in that they bring new dollars into the state as products are sold outside Kentucky and are linked to many other supporting enterprises. Output and sales of many of these commodities have continued to grow, but productivity gains in farming and mining mean that fewer and fewer workers are needed per dollar of output.

The opposite is true in the pure service industries, where increased demand for health care, business services, and education could only be met by raising the number of persons employed. The transportation, distribution, and warehousing industries have also grown rapidly during the last twenty years, as the national growth in these industries favored our central location. The Cincinnati airport in Northern Kentucky is one of the busiest passenger hubs in the US, and has been a magnet for distribution and office operations. The international air hub of United Parcel Service in Louisville is the 11th busiest air cargo site in the world, and 6th busiest in the US. UPS is now the largest private employer and largest taxpayer in Kentucky. Lexington is the center of a wide region that continues to gain auto-related manufacturing plants and supporting industries. These industries are lured to central Kentucky by inexpensive energy, land, and labor costs, but also because Lexington is now the exact center of the US population east of the Rocky Mountains. This means that producers of heavy, expensive consumer goods can minimize their transportation costs to market by locating in the Bluegrass area.

While Kentucky, like all states, has added health care, engineering, accounting, legal, data processing, telecommunications and other business service operations, the state has lagged in its ability to spawn or attract major corporate headquarters or research and development firms. Of the bordering states, only West Virginia has fewer than Kentucky's eight

Agriculture and Mining
Share of Kentucky Labor and Proprietors' Income, All Industries
Source: US Bureau of Economic Analysis



Fortune 1000 corporate headquarters. Indiana has fifteen, Tennessee has twenty-one, and the other bordering states have many more.

Human capital, earnings per job, and office industries

There is a myth that Kentucky's low education levels are due to the extremely low levels of schooling in rural parts of the state. In fact, nearly all regions of Kentucky rank low in terms of college attainment, and most are low in terms of high school attainment[2]. Except for Lexington, the larger metro areas lag similar markets around the US. As a reference for the Louisville, Northern Kentucky-Cincinnati, and Lexington markets, we picked three similar metros areas for each and organized some macro indicators of human capital. The Louisville-Southern Indiana metro lags Indianapolis, Nashville and Omaha in every indicator – population and job growth, education levels, professional jobs, and earnings per job. The Cincinnati-Northern Kentucky market lags Columbus and Kansas City in all measures, but is ahead of Cleveland in measures of growth - though not professional jobs and earnings per job.

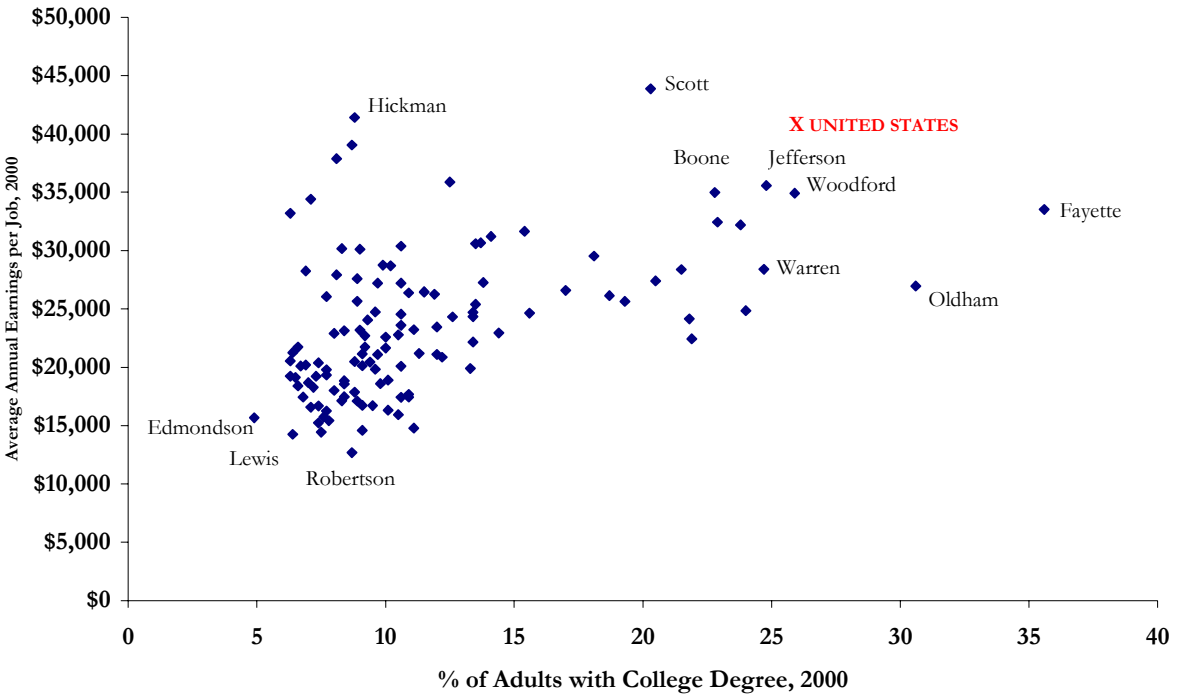
For Lexington, we chose three other mid-sized metros that are home to state flagship universities. Champaign-Urbana Illinois is the smallest, is in the commercial shadow of Chicago, and hence has fewer professional jobs. It is also not growing very fast. Knoxville is bigger and is growing at a similar rate to Lexington. The Lincoln Nebraska metro area is growing slightly faster than Lexington in terms of population, jobs, and earnings per job. Lexington ranks 3rd in terms of college attainment rates, 2nd highest in professional jobs per capita, and 1st in annual earnings per job. The high earnings per job reflects Lexington area's much higher concentration of manufacturing jobs (not shown here). Champaign and Lincoln, in particular, have few manufacturing jobs – less than nine percent of all jobs, compared to Lexington's thirteen percent.

Macro Indicators, Peer Metro Areas

	Population 2002	Population Growth 1990-2002	Job Growth 1990-2002	Percent of Adults with College Degree, 2000 *	Jobs in Information, Finance, Professional & Technical Service Industries per 10,000 Residents, 2002	Average Earnings per Job, 2002	Growth in Earnings per Job, 1990-2002
Louisville	**1,180,294**	**11.5%**	**19.7%**	**22.2**	**729**	**$37,984**	**57.1%**
Indianapolis	1,574,963	21.1%	25.4%	25.8	845	$41,725	61.0%
Nashville	1,352,568	28.4%	38.4%	26.9	896	$39,842	65.5%
Omaha	783,477	13.9%	21.6%	28.0	1,067	$38,777	62.3%
Cincinnati	**2,036,534**	**10.1%**	**20.2%**	**25.0**	**775**	**$40,378**	**53.3%**
Cleveland	2,141,802	1.8%	7.0%	23.5	865	$41,903	42.7%
Columbus	1,655,942	17.4%	27.1%	29.1	986	$40,286	57.7%
Kansas City	1,886,672	15.0%	22.2%	28.5	1,129	$40,916	60.6%
Lexington	**416,480**	**18.9%**	**24.8%**	**28.7**	**759**	**$38,283**	**52.0%**
Champaign-Urbana	214,786	5.7%	9.0%	38.0	697	$32,355	47.4%
Knoxville	629,589	17.3%	28.3%	23.5	795	$36,025	52.0%
Lincoln	273,853	19.0%	26.9%	32.6	1,023	$34,003	57.3%

Source, except for college attainment rate: US Bureau of Economic Analysis, using June 2003 metro area definitions.
The Louisville metro includes Southern Indiana, and the Cincinnati metro includes Northern Kentucky.
* Source: US Census Bureau, 2000 Census, using pre-2003 metro area definitions.

College Education and Earnings
120 Kentucky Counties, 2000

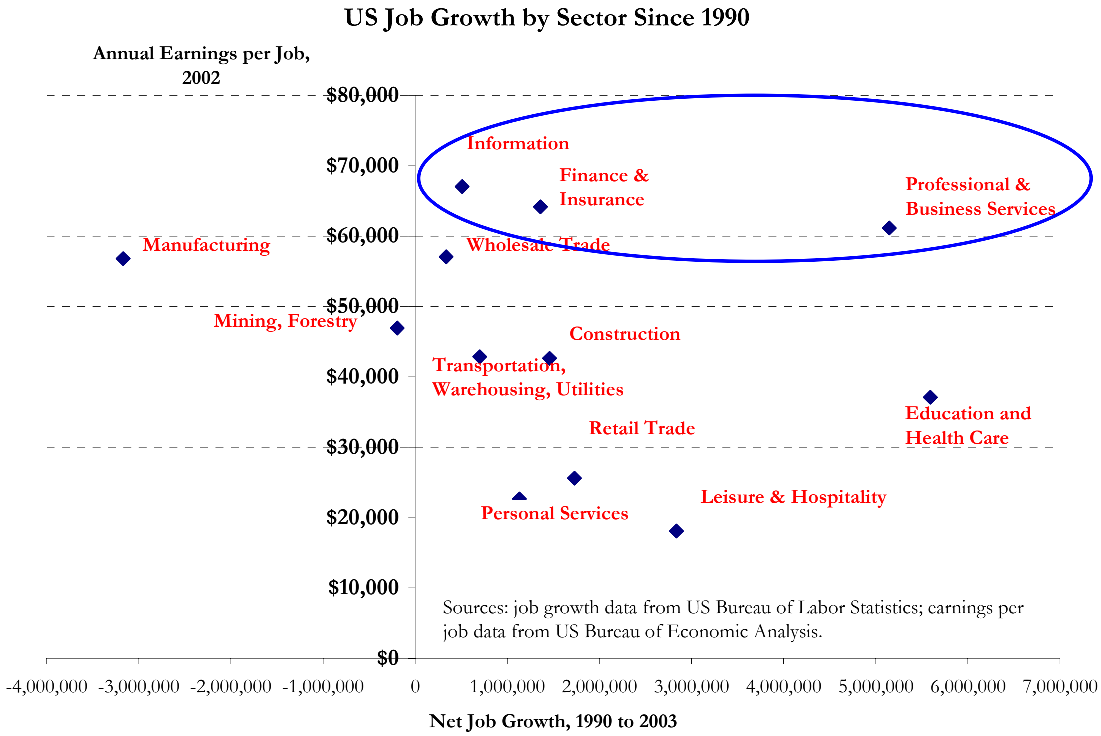


The above exhibit plots college attainment rates by county against average annual earnings per job. Note that the educational rates are estimated from surveys of households, based on county of residence, while the earnings data is based upon the county of work. So, the plot does not reflect the impact of commuting patterns. Nevertheless, the plot illustrates two important things. First, there is a clear relationship between formal education and earnings of workers. Second, not one county in Kentucky is above the national average in both education and earnings. Indeed only two or three counties are above the national average in either measure.

Kentucky's low human capital is reflected in the state's low concentration of office jobs, and is responsible for the state's low earnings per job. Here we measure office jobs as the number of people employed in the Information, Finance and Insurance, Professional and Technical Services industries. Note that nationally, jobs in these three sectors accounted for 40 percent of the 17.4 million net new jobs created since 1990. These fast growing industries include most of the higher paying private sector service sector jobs, excluding health care. We exclude health care since this industry is dominated by local population-oriented services, like hospitals, physician offices, and nursing homes.

In 2002, Kentucky had 36,000 jobs in the Information industries, which include publishing, telecommunications, and data processing. Kentucky had 82,000 jobs in the Finance and Insurance industries, which includes banking, investing, and all kinds of insurance. Kentucky had 92,000 jobs in the Professional and Technical Services industries, which include legal, accounting, architectural, engineering, testing, design, computer, marketing, advertising, public relations, consulting, and research and development services.

On a per capita basis, Massachusetts, Colorado and Delaware top the list of states, while Mississippi and West Virginia anchor the bottom. Kentucky is near the bottom, with only 514 jobs per 10,000 residents. All of Kentucky's other border states rank higher, with Virginia and Illinois supporting nearly twice the concentration of these jobs. This is not a surprising finding, given the international status of the Washington DC and Chicago markets underpinning their vast office industries. Nor should



one be surprised to see Missouri and Ohio ranked higher, given that they contain large cities in their jurisdictions, including St. Louis, Kansas City, Cleveland, Columbus, and Cincinnati. But the rise of office industries in Indiana and Tennessee should alert Kentucky policy makers to a competitiveness problem. Moreover, Kentucky ranks lower than dozens of rural states around the country, states like Alabama, Montana, North Dakota and South Dakota.

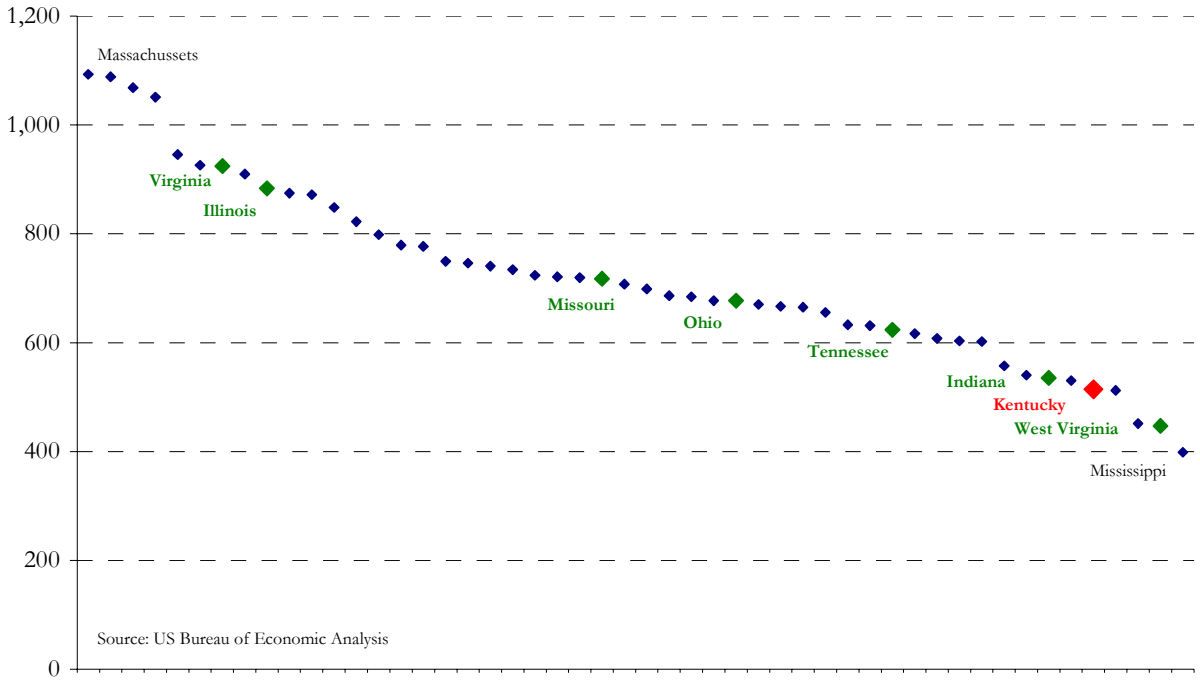
Overall, the economic record is mixed on metro areas around Kentucky. Job and population growth are tightly related, and the hottest metros are Clarksville-Hopkinsville, Bowling Green, and Lexington. The Huntington-Ashland metro has been losing population, and the Owensboro and Evansville-Henderson metros are growing quite slowly[3]. Earnings per job are highest in the Cincinnati-Northern Kentucky, Lexington, and Louisville-Southern Indiana metros, but pay has recently been growing fastest in the Bowling Green and Hopkinsville markets. It appears that the two major north-south interstate highways (I-75 and I-65) have been a boon to the regional economies south of the Ohio River, with the fastest growth rates in Kentucky around and between these highways. The tails of the state have seen the slowest growth.

Tax burdens

State and local taxes vary greatly around the US, as do the quantity and quality of public services provided by these governments. Taxes and public services are key factors in the competition among places for mobile companies and households. The evidence suggests that *local* taxes in Kentucky's largest markets - Louisville, Lexington and Northern Kentucky - are overall in line with those in competitor markets. These jurisdictions tend to rely upon occupational and insurance premiums taxes for growth. Property tax rates levied by urban school systems, large municipalities and county governments are comparable to those in other large cities, while property tax rates are relatively low in the other county and city jurisdictions around Kentucky. Jurisdictions in competitor markets tend to rely more on local sales taxes and higher property taxes.

But *state* tax burdens are high in these markets. Due to high Kentucky state taxes, Louisville,

Number of Jobs per 10,000 Residents, 2002
in Information, Professional & Technical Services, Finance and Insurance Industries



Lexington, and Northern Kentucky area workers and residents have a high tax burden relative to their counterparts in competitor markets. The primary culprit is the Kentucky individual income tax. Moreover, due to Kentucky state government's practice of aggressively redistributing resources from urbanized to sparsely populated parts of the state, the state's major cities receive relatively little in return for shouldering this high tax burden. And the cities' poor fiscal relationship with Kentucky state

Summary Economic Measures for Metro Areas Containing Kentucky Counties

Metro Areas	Population Growth, 1990-2002	Per Capita Income of Residents		Job Growth, 1990-2002	Average Annual Earnings per Job	
		Value, 2002	Growth, 1990-2002		Value, 2002	Growth, 1990-2002
Bowling Green	20.3%	$24,242	64.5%	30.0%	$31,200	60.2%
Cincinnati-Northern KY	10.1%	$31,804	62.0%	20.2%	$40,378	53.3%
Clarksville-Hopkinsville	23.3%	$24,716	81.3%	40.3%	$34,640	58.3%
Elizabethtown	7.9%	$25,324	69.8%	7.3%	$34,229	47.6%
Evansville-Henderson	5.8%	$29,116	63.6%	16.3%	$36,729	55.3%
Huntington-Ashland	-0.6%	$23,139	54.1%	7.8%	$32,064	29.8%
Lexington	18.9%	$31,136	59.9%	24.8%	$38,283	52.0%
Louisville-Southern IN	11.5%	$30,666	65.3%	19.7%	$37,984	57.1%
Owensboro	5.3%	$25,014	59.2%	13.9%	$31,776	46.4%
United States	15.4%	$30,906	58.7%	19.8%	$40,758	53.5%

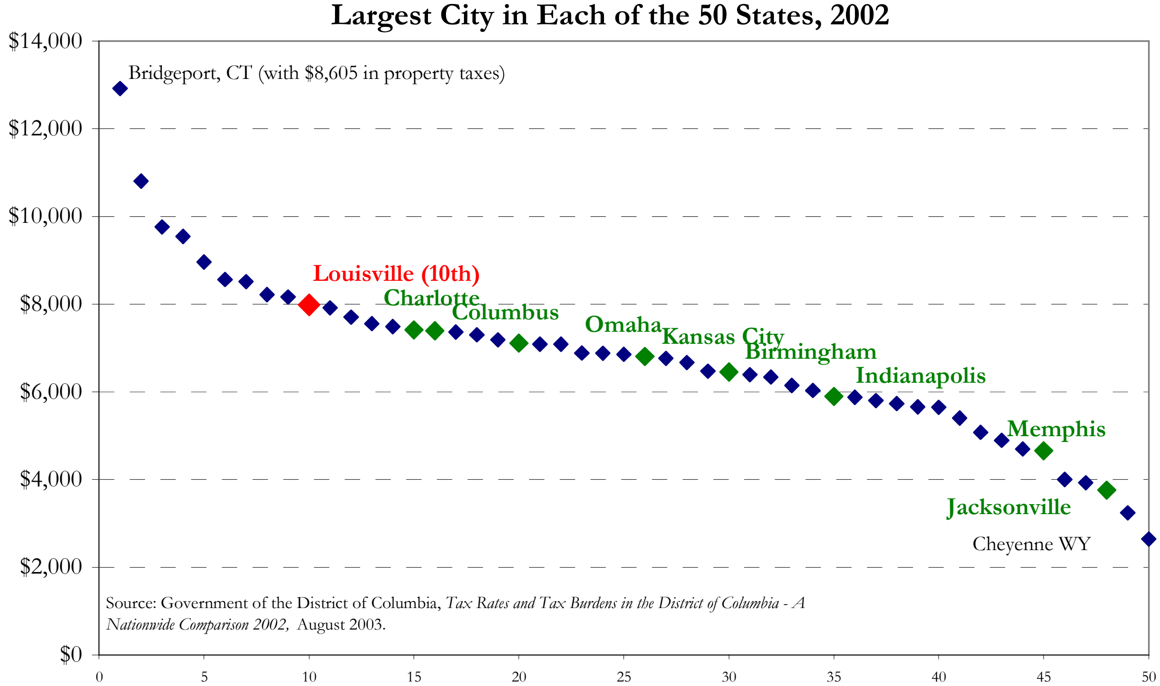
Source: US Bureau of Economic Analysis; using metro area definitions as of June 2003.

government is programmed to continue indefinitely, due to the structure of the tax code and the redistribution formulas embedded in state programs, particularly for local K-12 education and transportation. State government has mitigated this discrepancy somewhat in the past decade by allocating a large portion of state budget surplus dollars to the major cities for capital projects, e.g., the Covington and Louisville convention centers, Louisville Waterfront Park, University of Kentucky facilities. However, these discretionary allocations are a fraction of the annual net outflow of state dollars from the most urbanized areas.

Due to the complexities of tax codes and jurisdictions around the US, there are but a few comparative studies available. We consider two that focus on state and local taxes. Runzheimer International, a corporate relocation specialist located in Milwaukee, released a study three years ago of comparative household tax burdens in major cities. Runzheimer estimated the annual tax burden on a family of four, with income of $60,000, and living in a home valued at $180,000. Here the geographic reference point is a suburban location, and for Louisville this means outside the (old) City of Louisville but inside Jefferson County. The tax calculations included federal income taxes. Runzheimer found Louisville to have the fifth-highest tax burden ($14,800) among the largest cities in each state, following New York, Philadelphia, Milwaukee, and Cleveland.

A detailed and ongoing study by the government of the District of Columbia compares the tax burdens on DC residents to those of residents in the largest city in each of the fifty states. As the largest city in Kentucky, Louisville is included in the DC studies. Analysts examine state and local taxes on real estate, income, sales, and automobiles for five categories of family income. The geographic reference point is the largest city jurisdiction, not the metropolitan area. This introduces some "noise," in that some of the cities have wide jurisdictions that include large suburban areas, while other cities – like Louisville – include only the most urbanized core. The recent merger of the City of Louisville and Jefferson County governments should improve Louisville's position in this ranking, as most county residents pay lower property tax rates than those in the former City.

Tax Burden, State and Local Government, Family of Four with $75,000 income Largest City in Each of the 50 States, 2002



State and Local Tax Burden
Louisville's Rank Among Largest Cities of Each State (1 = highest taxes)

Family Income	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
$25,000	13	12	11	7	7	7	7	5	8	7
$50,000	12	8	8	8	11	9	7	8	12	10
$75,000	12	10	10	9	14	12	7	8	15	10
$100,000	11	10	11	8	15	14	10	9	16	13
$150,000							11	10	16	15

Source: Government of the District of Columbia, *Tax Rates and Tax Burdens in the District of Columbia - A Nationwide Comparison 2002* , August 2003, and previous issues (http://cfo.dc.gov/services/studies/index.shtm).

The table summarizes Louisville's ranking over the ten years studied by the DC government. Several things stand out. First, Louisville has one of the highest household tax burdens among the largest cities in each state. Second, the high tax burden is due primarily to the high income taxes, and these are largely collected by Kentucky state government, not the City of Louisville or suburban governments. Third, the difference in household tax burdens across competitor markets is large: residents of Jacksonville and Memphis (and by implication Nashville) pay less than half of what Louisville residents pay, a two to three thousand dollar per year difference depending upon income level. It is safe to say that Lexington and Northern Kentucky residents face similar tax burdens as do Louisville residents. Property tax rates in the three most urbanized Kentucky places are fairly similar, and they all levy occupational taxes on workers and net profits taxes on businesses.

State fiscal policies

Kentucky ranks fifth highest among states in the degree to which state *and* local revenues are concentrated at the state level. With seventy percent of all state and local revenue controlled at the state level in Kentucky, only Alaska, Delaware, Hawaii and New Mexico are more centralized. This is reflected in Kentucky's high ranking in most state tax comparisons, in the growth in state government employment, in the degree of state subsidy for local K-12 education, in the number of public universities and programs, in road mileage maintained by the state, in state subsidies of county government operations, the number of resort parks, and many other fiscal categories. Indeed, Kentucky has centralized public finances so much that it is now common for local elected officials to look to Frankfort to fund such local public goods as water lines, sewer plants, fire departments, sidewalks, ballparks, conference centers, museums, and golf courses. Meanwhile, most of the state funds are generated in but a few urbanized areas, places that are heavily taxed but restricted by redistribution formulas from receiving proportional funds back. Kentucky's fiscal policies clearly disadvantage the economic competitiveness of its largest cities. If Kentucky is ever to catch up in terms of prosperity, it will be led by its cities. But its urban areas cannot compete nationally and internationally under an anachronistic tax structure and spending policies geared primarily to redistribution and entitlement.

In our study, we estimate that the Louisville, Lexington, and Northern Kentucky metro areas accounted for $4.2 billion of Kentucky state government taxes and fees collected in fiscal year 2003, but the state spent only $2.8 billion in these areas. These three metros contributed $2,400 per resident to state revenues, while residents of nonmetro counties contributed but $1,500 per resident. The causes of the redistribution are many and pervasive in state policies and programs. The most prominent are the state K-12 school funding formula, the state gas tax revenue sharing formula, and the subsidy of police, recreation, and other government services in dozens of sparsely populated counties. The local K-12 school funding redistribution formula is so aggressive that 98 of the 176 school districts in the state now generate less than one-fourth of their annual budgets from local sources, while a handful of urbanized districts are heavily penalized. The state gas tax revenue sharing

formula, codified in 1948, requires that nearly all funds be spent in rural places where there is little population or traffic. While dozens of sparsely populated counties receive hundreds of dollars per capita in road funding annually, the three most populated counties receive less than twenty-five dollars in funding per resident. These redistribution formulas have very negative consequences for the urban economic engines, both in terms of cash flow and in terms of their relative attractiveness for mobile workers and companies.

These findings suggest the need for an overhaul of state fiscal policies in Kentucky, with the goal of making our urban areas more competitive and thereby lifting the entire state in key indicators of prosperity. Changes would need to occur on both the tax and the spending side, and in a number of important categories:

Tax modernization. The state should consider lowering or eliminating the individual income tax, both to send a signal to talented and enterprising people that success is rewarded not penalized, but also to reduce the drain on disposable incomes of residents of the most urbanized parts of the state. Cigarette and other vice taxes could be raised, and expanded gaming could be considered. Kentucky already has legalized gaming, in the form of horse racing, a lottery, and bingo. Moreover, Kentuckians are gambling heavily at Indiana and Illinois riverboat casinos, handing hundreds of millions of dollars in gaming taxes to those state governments.

Modernize spending formulas. The gas tax revenue sharing formula needs to be changed to ensure that more of the state Road Fund dollars are spent where the population lives, the traffic occurs, and the taxes are paid. The state K-12 program needs to be revised to require more local contributions for local schools in less populated areas, thereby reducing the huge drain of dollars from cities to pay for schools in less densely populated areas of the state. There are others, but these two formulas are most important to the long term economic development of Kentucky.

Shift some fiscal power and responsibility from state to local governments. On the revenue side, this can take the form of sharing state revenues with municipalities, local option sales taxes, repealing House Bill 44, and requiring local school districts to levy occupational taxes. The state can then lower its fiscal responsibility for provision of local K-12 education, road maintenance, and community projects.

Other bold initiatives should be considered. The state should investigate more possibilities for privatization of functions. For example, it seems likely that private companies could better manage hospitality and recreational operations at the state resort parks, turning a perennial financial drain into a performing asset. There is also scope for consolidation of administrative service units around the state. In many cases, current state funding formulas enable smaller cities, counties, school districts, and other governmental jurisdictions to exist independently rather than consider consolidation to save money or improve service. The Commonwealth should engage in a study of these opportunities and find a way to reward consolidation wherever efficiencies can be found. The Lexington and Louisville communities voted to merge their major city and county governments, to popular acclaim, suggesting that other government consolidations around the state may lead to more effective administration and service delivery.

(Endnotes)

1 "Kentucky's Economic Competitiveness: A Call for Modernization of the State's Fiscal Policies", by Paul Coomes and Barry Kornstein, University of Lousiville, November 2004, 73 pages, http://monitor.louisville.edu/taxes/tax.htm.

2 See also "The Recent Economic Performance of Regions in Kentucky", by Paul Coomes and Michael Price, University of Louisville, May 2001, 67 pages, for the Kentucky Economic Development Partnership, http://monitor.louisville.edu//kentucky/KyRegionsED.pdf .

3 For a more recent look at the relative performance of Owensboro, see "Philanthropy, Charitable Giving, and the Public Sector in Owensboro-Daviess County Kentucky", by Paul Coomes and Raj Narang, University of Louisville, January 2004, 34 pages, for the Hager Educational Foundation, http://monitor.louisville.edu/kentucky/Owensboro%20Philanthropy%20Study.pdf .

Acknowledgements

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that underpinned much of this research. Thanks to Danny Fore, Gary Toebben, Steve Higdon, and Julian Beard for their leadership. For the first time, Northern Kentucky, Lexington, and Louisville are working together to learn about and highlight the urban competitiveness issues so key to our state's prosperity.

We also wish to thank Margaret Maginnis for her help with the database construction and for the map of metropolitan and micropolitan areas. And we appreciate the assistance of many state officials who provided data and advice for this report.

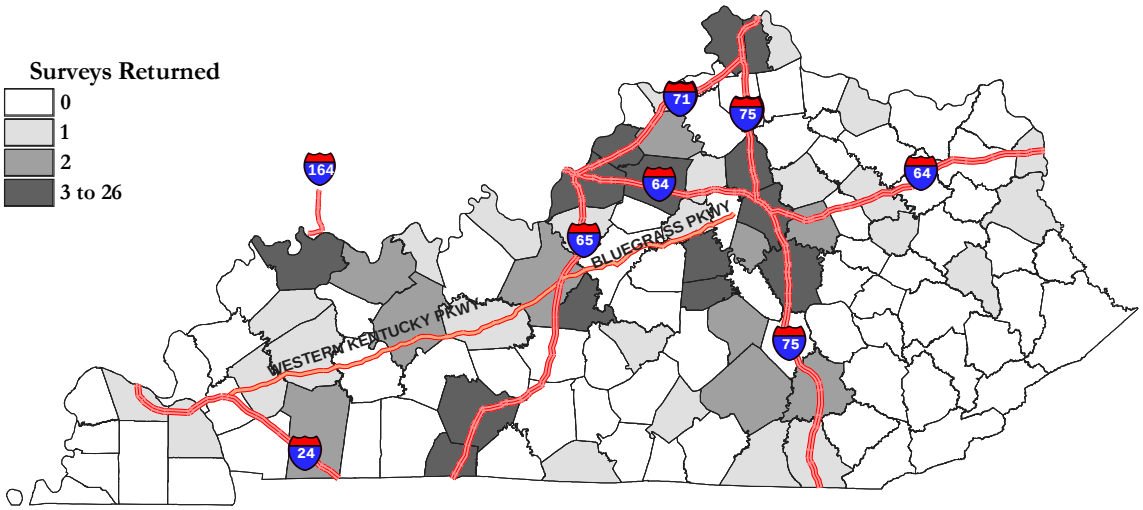
AIK Manufacturing Business Confidence Survey

Vladyslav Sushko

The AIK Manufacturing Business Confidence Survey is an annual joint effort between the Associated Industries of Kentucky and the Center for Business and Economic Research. The survey asks businesses to report on their actual performance over the past year and to make predictions for the next year in areas such as employment, sales, profits and capital expenditures. While actual performance in the manufacturing sector has continued to improve since the trough of the last recession, optimism about performance in 2005, while remaining positive, is not quite as strong as it has been in recent surveys.

The November 2004 Manufacturing Business Confidence Survey is the second year of a merged effort between the Associated Industries of Kentucky (AIK) and the University of Kentucky Center for Business and Economic Research (CBER) each of whom had conducted separate Business Confidence surveys for a number of years. This survey asked businesses to report on their performance in a number of key indicators during the past 12 months such as employment, sales and profits, and on their expectations for the next 12 month period for the same indicators. The survey was sent by mail to 687 AIK members operating in the manufacturing industry throughout the state, 149 of which responded, resulting in a response rate of approximately 22%. Of these, 59% were large manufacturing establishments (with 50 employees or more). As was to be expected, a ***considerable majority of respondents are located in counties that have or are next to an interstate highway*** (especially if the Bluegrass and Western Kentucky (Wendel Ford) parkways are included as major highways.) Of course, it is no coincidence that these same highways also pass through or near most of the population concentrations in the state. If Interstate 164 in Indiana is counted as Henderson county's highway in the western part of the state only one county (Boyle) had more than one respondent but was more than one county away from a major highway. This overall distribution of respondents across the state as shown in Figure 1 is very similar to the distribution in previous surveys.

Figure 1: Number of Manufacturing Confidence Survey Respondents by County



Manufacturing Confidence Survey Summary Results

Table 1: ALL MANUFACTURERS

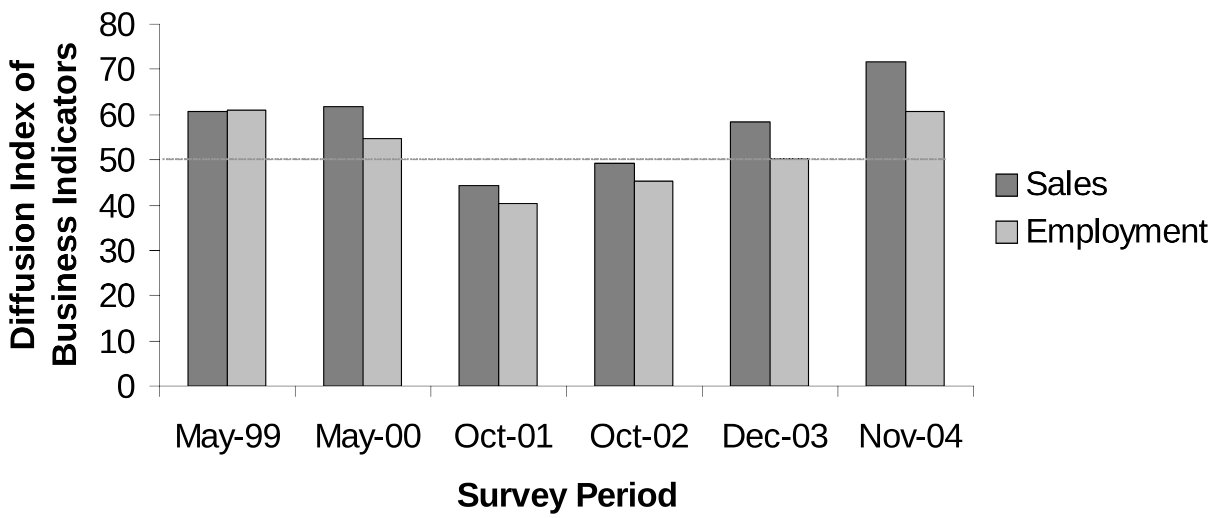
	Conditions Past 12 Months			Expectations Next 12 Months		
	Decrease	No Change	Increase	Decrease	No Change	Increase
Employment	23.78%	29.37%	46.15%	14.39%	37.41%	48.20%
Sales	21.58	13.67	64.75	9.63	17.04	73.33
Profits	31.91	17.73	50.35	13.24	21.32	65.44
Capital Expenditures	14.08	28.87	57.04	14.60	31.39	54.01
Industry Production	24.29	23.57	52.14	12.95	33.81	53.24

For those surveyed, both sales and employment have risen during 2004 and a majority of businesses expect them to continue to rise in 2005 as well. Other indicators, such as profits and capital expenditures have also been on the rise for a majority of manufacturing establishments reporting.

Figure 2 shows the reported performance of Kentucky manufacturers in sales and employment from the past 6 years of surveys via a diffusion index. A diffusion index provides a way to compare overall changes where 'no change' is one of the possible responses. In the diffusion index, below, a reading below 50 suggests deterioration in sales or employment over the period and a reading above 50 implies a net-improvement in sales or employment.

When compared with past survey results, 2004 data indicates a continuing improvement in the performance of the Kentucky manufacturing sector since the trough of the last recession. The rate of growth in sales was slightly higher in 2004 than in

Figure 2: Manufacturing Sector Performance in Selected Indicators



the two preceding years. Between 2001 and 2003 annual sales grew by nearly 10 index points, from 40.4 to 50.2. During 2004, sales continued to grow at a 13 point annual rate. The employment growth rate in the manufacturing sector also grew at an increased rate of over 10 index points between 2003 and 2004 compared to the approximately 5 point increases over each period of 2001 and 2002. The employment diffusion index indicates that ***hiring conditions in the manufacturing sector, at 60.8 index points, have finally reached pre-2001 levels***. Overall, the diffusion index comparison for the past 6 years shows continuously improving sales and employment conditions in the manufacturing sector over the period of the last three years. Moreover, 2004 data indicates that the growth in these parameters has proceeded at an increasing rate in 2004.

2004 Conditions

The Manufacturing Confidence Survey results indicate that manufacturers are still experiencing the effects of an economic upturn following the 2001 recession. Over 64% of respondents report a rise in sales and more than 46% have increased employment, an 18 percentage point increase in employment over the 2003 percentages. In addition, over 50% of manufacturing establishments reported a rise in profits and 57% have increased capital expenditures over the last 12 months. However, despite these positive figures for around half of respondents, the remainder of the businesses reported either no change or a decline in employment, sales, or profits. Around 22% of businesses reported a decline in sales and 32% reported a decline in profits. Compared with only 14% and 18% of businesses reporting no change in sales and profits respectively, these numbers represent a wide range in performance in the manufacturing sector over the past year.

2005 Expectations

In recent years, the majority of businesses have been optimistic about the near future. While expectations for 2005 remain high as well, they are less uniform across the sample than in the previous years. Over 73% of manufacturing establishments predict sales to increase during the following year. This is significant because research has shown that in the short-run sales confidence has a stronger correlation with future business output than other indicators. About 50% of businesses expect to increase employment and capital expenditures. Similarly, 53% of respondents predict a rise of output in their respective industries as well. However, between 13% and 14% of manufacturers expect a decline in employment, profits, capital expenditures, and industry production. Such double digit percentages for negative future expectations are highly unusual for this survey when the state is not experiencing a recession, and could indicate a slowdown of the business cycle recovery or a change in the way businesses assess the short-term future.

Comparing Previous and Current Surveys

Current Conditions

Reflecting the improving business conditions during 2004, the percentage of businesses that reported an increase in those major indicators which were in both surveys grew uniformly about 20 points compared to the 2003 survey. With the exception of capital expenditures there was also a small reduction in the percentage of businesses reporting a decrease in these indicators. Figure 3 shows these changes as well as the corresponding decrease in those reporting no change.

Figure 3: Comparison of Current Conditions with Previous Survey

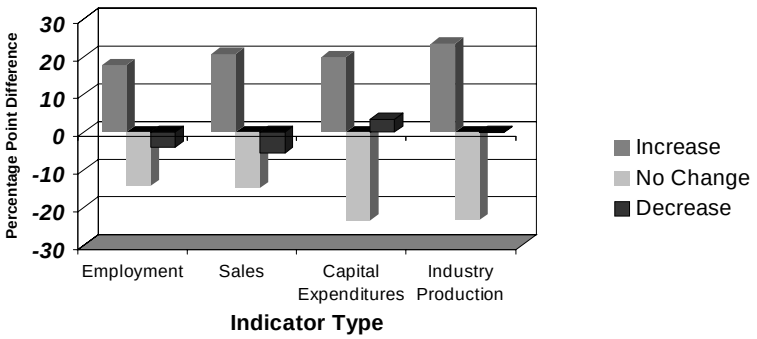


Table 2: Percentage Point Change from Dec. 2003

	Conditions			Expectations		
	Decrease	No Change	Increase	Decrease	No Change	Increase
Employment	-4.1	-14.3	+17.8	+7.8	-10.6	+2.8
Sales	-5.6	-14.9	+20.7	+3.2	-9.2	+5.6
Capital Expenditures	+3.4	-23.4	+19.9	+9.0	-24.7	+15.7
Industry Production	-0.2	-23.3	+23.4	+7.7	-5.2	-2.6

Future Expectations

Compared to the 2003 survey, the 2004 respondents seem to have detected a change in the prospects for their industries. Not all prospects are good however, as was discussed in the section on 2005 expectations, there was a larger than normal increase in the percentage who felt that there would be a downturn in these economic indicators. However, as Table 2 shows those expecting a decrease were less than 10 percentage points more for each of the indicators and, for Capital expenditures and Sales, there was an even larger change in the percentage expecting an increase. Only those expecting no change in the near future showed a percentage drop.

Results for Large Businesses

Even more can be learned about manufacturing business conditions in the state by focusing on large businesses. As large businesses represent a significant share of the economy, they are a good indication of current as well as future business conditions. Businesses with 50 employees or more are classified as large. Fifty-nine percent of respondents from the November 2004 survey fall into this category. Fifty-eight percent of large manufacturing establishments report an increase in employment over the past 12 months and another 77% report an increase in sales for the same time period. Although increases in profits for the past 12 months lag 21 percentage points behind increases in sales (56% of large businesses report a rise in profits) such a gap is to be expected given that 63% of large manufacturing establishments reported an increase in capital expenditures at the same time.

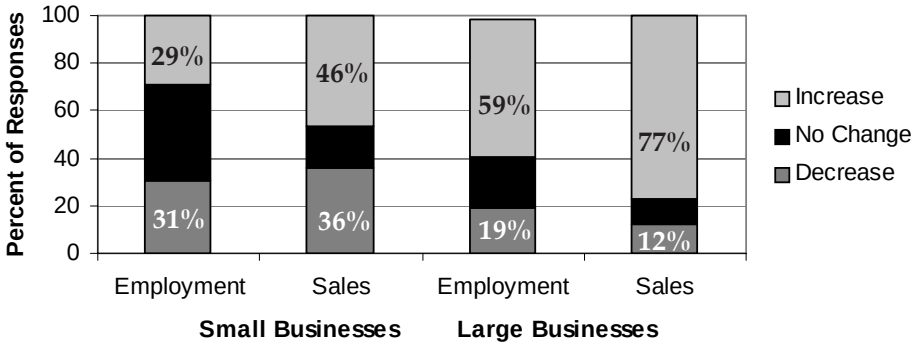
The percentage of large businesses reporting an increase in the five business indicators listed in Table 3 is on average 8.8 percentage points higher than the percentage of respondents reporting increases in the same parameters in the combined results for small and large businesses for November 2004. These results are consistent with data from previous years. ***Large businesses significantly outperform small business in all parameters***. The differences in sales and employment trends for the past year between large and small businesses are illustrated in Figure 5.

The gap between large businesses and the sample as a whole is much smaller for future expectations. The average difference in positive future expectations between large manufacturing establishments and the entire sample is only 4.2 percentage points in favor of large businesses. A weak majority consisting of 52% of large businesses plan to increase employment and 59% plan to increase capital expenditures over the next 12 months. Meanwhile, an unusually high number of large businesses for this survey had negative expectations for these parameters. Roughly 12% plan to decrease employment and 14% plan to cut on capital expenditures. Figure 6 shows large business expectations for future sales, employment and capital expenditures in 2003 and 2004. As with all businesses, the percentage of large businesses with negative expectations for employment and capital

Table 3: Large Businesses
Percent of Responses

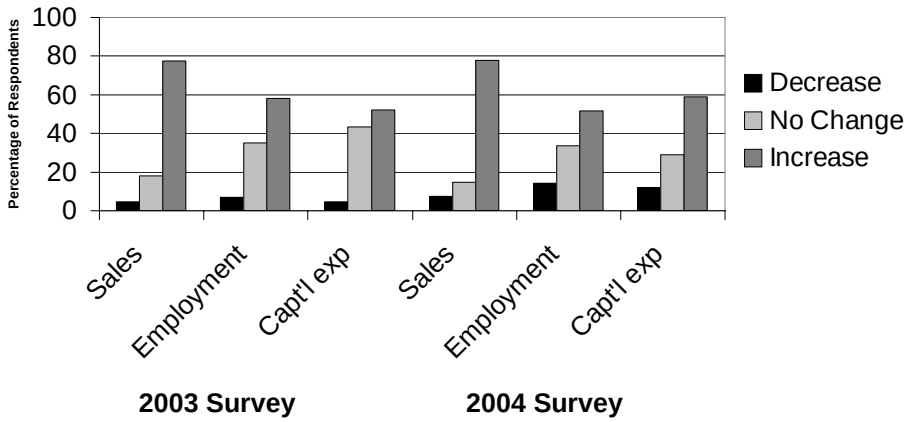
	Conditions Past 12 Months			Expectations Next 12 Months		
	Decrease	No Change	Increase	Decrease	No Change	Increase
Employment	19.05	21.43	58.33	14.46	33.73	51.81
Sales	12.05	10.84	77.11	7.41	14.81	77.78
Profits	27.38	16.67	55.95	9.88	19.75	70.37
Capital Expenditures	14.29	22.62	63.10	12.05	28.95	59.04
Industry Production	16.87	22.89	60.24	9.64	34.94	55.42

Figure 5: Distribution of Change by Business Size



expenditures has more than doubled between December 2003 and November 2004. Since employment and capital expenditures represent business investments in inputs, these increased percentages of negative expectations may indicate a slowdown in the manufacturing business investments in the future, regardless of the business size. The good news is that expectations for future sales remain very strong. Seventy-eight percent of large business respondents expect sales to rise in the next 12 months, compared to a mere 7 percent that expect sales to fall. Such strength of the sales parameter indicates that ***although investment in production inputs may be slowing down, we may not see the effects of this development in the short-term due to already submitted production orders ingrained in the expectations for future sales***.

Figure 6: Large Business' Future Expectations for Selected Indicators



Kentucky in Profile

William H. Hoyt, Anna Laura Stewart and Jennifer Burnett

The primary purpose of this section is to provide some baseline demographic and economic information about the state of Kentucky and its position relative to neighboring states and the U.S. The primary sources of data are the 2000 Census, the 2003 Census population projections and the U.S. Bureau of Economic Analysis' REIS. Topics covered include population, income, employment and employment share by industry.

Introduction

This section of the Kentucky Annual Economic Report provides basic economic and demographic data about the Commonwealth. In addition to providing recent data relevant to Kentucky, it also ranks Kentucky against neighboring states and the nation in some key areas. The following data are divided into four sections: Population and Population Composition of Kentucky and its Neighbors, Income and Employment Measures for Kentucky and its Neighbors, Educational Attainment of Residents of Kentucky and its Neighbors and Share of Employment, by Industry, of Kentucky and its Neighbors.

Population and Population Composition of Kentucky and its Neighbors[1]

Kentucky was the second smallest in population, at 4,117,827, compared to its neighboring states in 2003, ranked only above West Virginia. Kentucky was also more rural compared to surrounding states, again ranking only above West Virginia.

Figure 1 illustrates Kentucky's 2003 total population compared to the rest of the nation.

Figure 1: 2003 Total Population by State

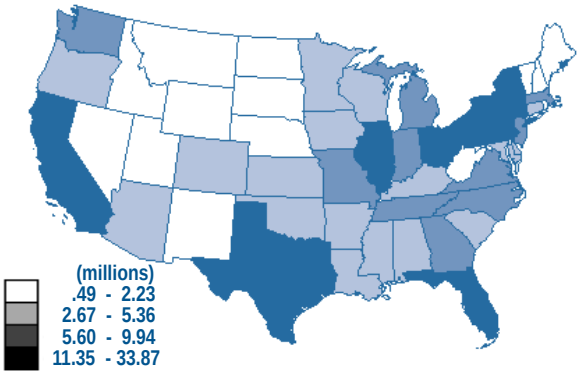


Table 1 further compares the total population and the population composition of Kentucky and its neighbors.

Table 1: Population and Population Composition of Kentucky and its Neighbors

State	Population (2003)	Rank	Urban %	Rank
Kentucky	**4,117,827**	**7**	**55.8**	**7**
United States	290,809,777	-	79.2	-
Illinois	12,653,544	1	87.8	1
Indiana	6,195,643	4	70.8	4
Missouri	5,704,484	6	69.4	5
Ohio	11,435,798	2	77.4	2
Tennessee	5,841,748	5	63.6	6
Virginia	7,386,330	3	73.0	3
West Virginia	1,810,354	8	46.1	8

Urban and Rural Population Growth[2]

The rate of urbanization in Kentucky as compared to surrounding states and the rest of the nation is a topic of great importance. The Census Bureau's definition of urban consists of "all territory, population, and housing units located within an urbanized area (UA) or an urban cluster (UC). It delineates UA and UC boundaries to encompass densely settled territory, which consists of: core census block groups or blocks that have a population density of at least 1,000 people per square mile and surrounding census blocks that have an overall density of at least 500 people per square mile." The Census Bureau classifies rural as "all territory, population, and housing units located outside of UAs and UCs. The rural component contains both place and nonplace territory. Geographic entities,

such as census tracts, counties, metropolitan areas, and the territory outside metropolitan areas, often are 'split' between urban and rural territory, and the population and housing units they contain often are partly classified as urban and partly classified as rural." Note that these definitions are current as of the 2000 Census and differ slightly from previous years' classifications. For the purposes of this report, counties in Kentucky are identified as "urban" based on the 2000 Census parameters.

There are seven Metropolitan Statistical Areas (MSAs) that contain Kentucky counties. These MSAs, as well as the counties that exist within them, can be found in Table 2.

Table 2: Counties in Kentucky Within an MSA

Cincinnati, OH MSA	**Lexington, KY MSA**
Boone County	Bourbon County
Campbell County	Clark County
Gallatin County	Fayette County
Grant County	Jessamine County
Kenton County	Madison County
Pendleton County	Scott County
	Woodford County
Clarksville, TN MSA	
Christian County	**Louisville, KY MSA**
	Bullitt County
Evansville, IN MSA	Jefferson County
Henderson County	Oldham County
Huntington, WV MSA	**Owensboro, KY MSA**
Boyd County	Daviess County
Carter County	
Greenup County	

The population growth rates of the counties within an MSA (Census 2000 classified as urban), exceed the rates of those counties classified as rural from 1960 – 2000. Figure 2 compares the growth rates of rural and urban counties as well as the growth rate of Kentucky as a whole.

Urban county growth exceeded rural county growth in every period between 1960 and 2000 except between 1970 and 1980. Overall, from 1960 to 2000, urban county growth exceeded rural county growth by over 14%. The data used to compile Figure 2 can be found in Table 3.

Figure 2: Urban and Rural County Population Growth Rates 1960-2000

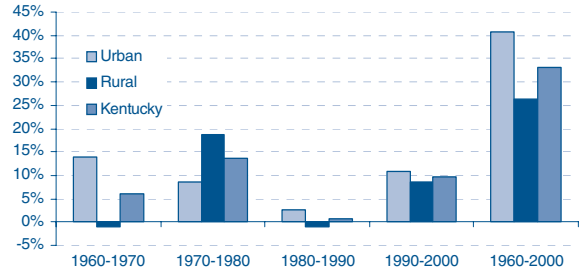


Table 3: Urban and Rural Change in Population by decade from 1960-2000

	1960-1970	1970-1980	1980-1990	1990-2000	1960-2000
Urban	13.96%	8.68%	2.53%	10.86%	40.77%
Rural	-0.92%	18.72%	-1.01%	8.56%	26.40%
Kentucky	5.94%	13.73%	0.67%	9.67%	33.03%

Ethnic Diversity[3]

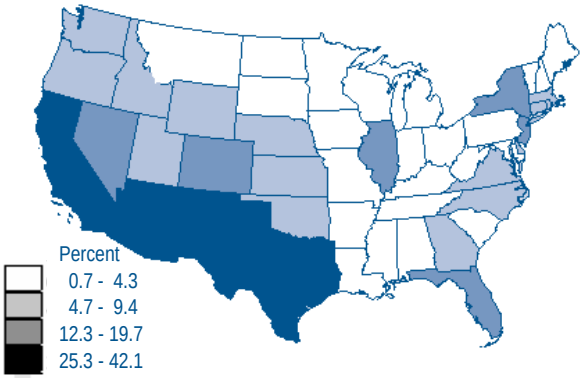
Table 4 represents Kentucky's percent of population by major ethnic groups in 2000. Kentucky is the least diverse (except for West Virginia) when compared to its neighboring states and the United States average.

Table 4: Population by Major Ethnic Groups, 2000

	White		African-American		Hispanic	
State	**%**	**Rank**	**%**	**Rank**	**%**	**Rank**
Kentucky	**90.1**	**2**	**7.3**	**7**	**1.5**	**7**
United States	75.2	-	12.3	-	13.7	-
Illinois	73.5	7	15.1	3	12.3	1
Indiana	87.5	3	8.4	6	3.5	3
Missouri	84.9	5	11.2	5	2.1	5
Ohio	85.0	4	11.5	4	1.9	6
Tennessee	80.2	6	16.4	2	2.2	4
Virginia	72.3	8	19.6	1	4.7	2
West Virginia	95.0	1	3.2	8	0.7	8

Figure 3 compares Kentucky to the rest of the United States in percentage of population that is Hispanic, the largest ethnic group in the U.S. While the percentage of Hispanic population has grown

Figure 3: Percentage of Hispanic Population



from .5 percent of Kentucky's population in 1990 to 1.5 percent in 2000, Kentucky still falls within the lowest tier of states in terms of Hispanic population.

Age[3]

The percentage of people under 18 years of age in Kentucky is very similar to that of neighboring states and the United States average; Kentucky is also close to the average percentage of those over 65 years of age (Table 5).

Table 5: Age Distribution

State	Under 18 %	Under 18 Rank	Over 65 %	Over 65 Rank
Kentucky	**24.6**	**6**	**12.5**	**4**
United States	25.7	3	12.4	5
Illinois	26.1	1	12.1	6
Indiana	25.9	2	12.4	5
Missouri	25.5	4	13.5	2
Ohio	25.4	5	13.3	3
Tennessee	24.6	6	12.4	5
Virginia	24.6	6	11.2	7
West Virginia	22.3	7	15.3	1

When viewed at the county level, the percentage of the population in Kentucky over 65 shows a distinct regional pattern, with a heavier concentration of persons over the age of 65 located in the western part of the state (Figure 4).

Income and Employment Measures for Kentucky and its Neighbors[3]

Table 6 provides Census data on income. Again, Kentucky's income, both median family and per capita, are only above West Virginia's levels and only West Virginia has a higher poverty rate.

Figure 4: Percentage of Persons over the age of 65 by County

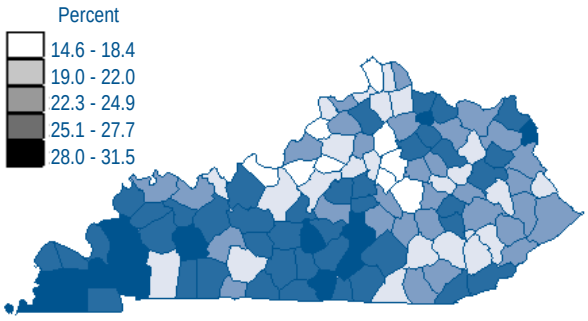


Table 6: Income in 1999

	Median Household Income $	Rank	Income per Capita $	Rank	Income below poverty level %	Rank
Kentucky	**33,672**	**7**	**17,819**	**7**	**15.8**	**2**
United States	41,994	-	21,067	-	12.9	-
Illinois	46,590	2	22,760	2	10.7	5
Indiana	41,567	3	20,076	4	9.5	8
Missouri	37,934	5	19,618	5	11.7	4
Ohio	40,956	4	20,694	3	10.6	6
Tennessee	36,360	6	19,120	6	13.5	3
Virginia	46,677	1	23,506	1	9.6	7
West Virginia	29,696	8	16,322	8	17.9	1

As seen in Figure 5 below, Kentucky ranked in the bottom tier of states in terms of median household income in 2000.

Figure 5: Median Household Income, 2000

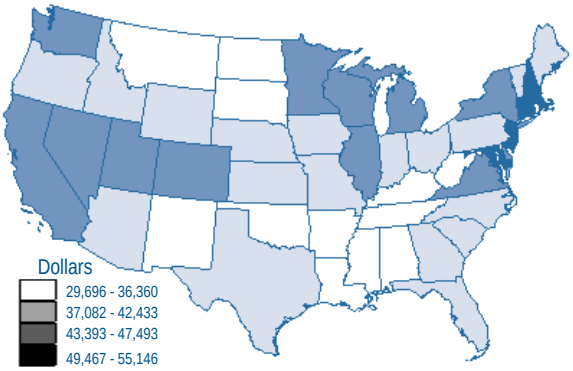
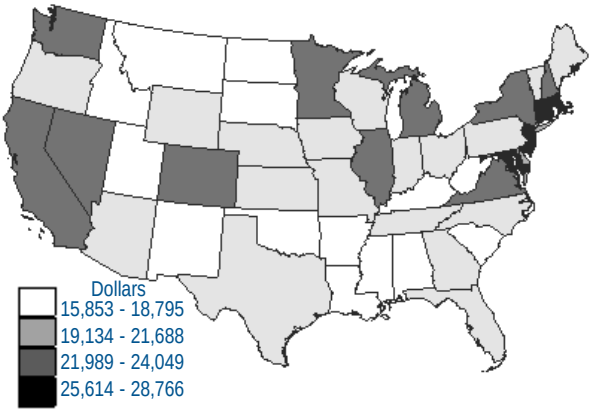


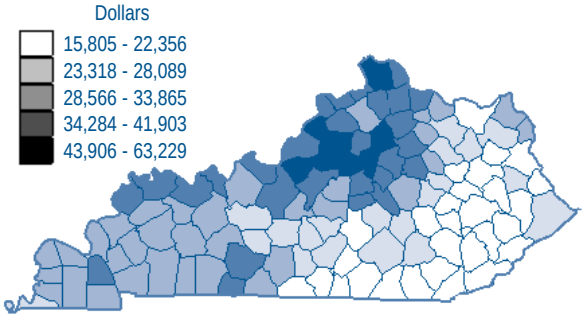
Figure 6 shows income on a per capita basis for the U.S.

Figure 6: Per Capita Income, 2000



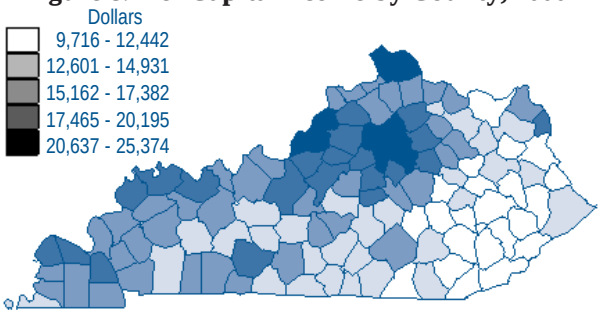
There is distinct variation in median household income among counties. The lowest incomes fall within the Appalachian and South/Southeastern counties of the Commonwealth. Figure 7 illustrates this variation.

Figure 7: Median Household Income by County, 2000



Per capita income follows a pattern similar to the pattern found in median household income, with the lowest per capita incomes primarily in the Southeastern part of the state. The highest per capita incomes are largely in highly urbanized counties. Figure 8 shows county per capita income in Kentucky.

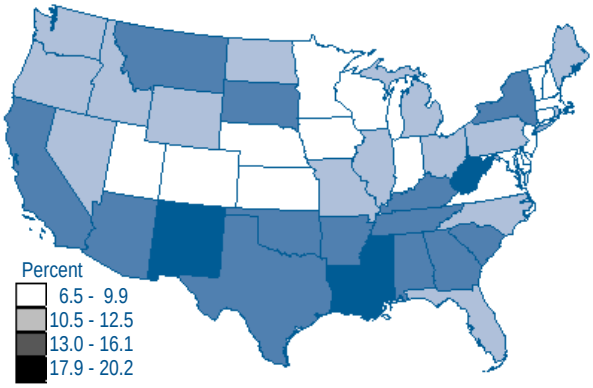
Figure 8: Per Capita Income by County, 2000



Poverty[3]

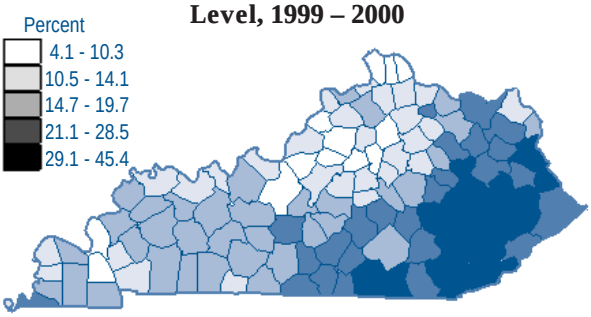
Echoing the relatively low median household income and per capita income, Kentucky's percent of persons below the poverty level in 1999-2000 ranked next to highest compared to its neighboring states. Kentucky's position relative to the U.S. can be seen in Figure 9.

Figure 9: Percent of Persons Below Poverty Level, 1999 – 2000



As seen in the county map below (Figure 10) the largest percentage of poverty occurs predominantly in the Appalachian and South/Southeastern counties of the Commonwealth.

Figure 10: Percent of Persons Below Poverty Level, 1999 – 2000



Unemployed, Employed, and Disabled Workers[3]

As seen in Table 7, Kentucky's unemployment rate remained fairly consistent with its neighbors in 2000 at 5.7 percent and was lower than the U.S. unemployment rate of 5.8 percent.

Education[3]

Kentucky's level of educational attainment ranked consistently below it's neighboring states and

Table 7: Unemployed, Employed, and Disabled Workers

	Unemployed		Employed		Disabled	
	%	Rank	%	Rank	%	Rank
Kentucky	5.7	3	44.5	7	9.9	3
United States	5.8	-	45.8	-	8.2	-
Illinois	6.0	2	47.0	5	8.8	6
Indiana	4.9	7	48.8	1	7.2	7
Missouri	5.3	5	47.5	4	10.9	2
Ohio	5.0	6	47.6	3	9.6	4
Tennessee	5.4	4	46.6	6	11.2	1
Virginia	4.1	8	48.2	2	9.5	5
West Virginia	7.3	1	40.5	8	6.4	8

the U.S. Figure 11 compares the percent of Kentucky's population with a high school degree or greater to the rest of the nation. Figure 12 provides this breakdown in Kentucky on a county level and shows about the same northwest/southeast geographic distribution as the income and poverty maps on the previous page. Figures 13 and 14 show college graduates (see also Table 8).

Figure 11: Percent of population over 25 with High School or Greater (2000)

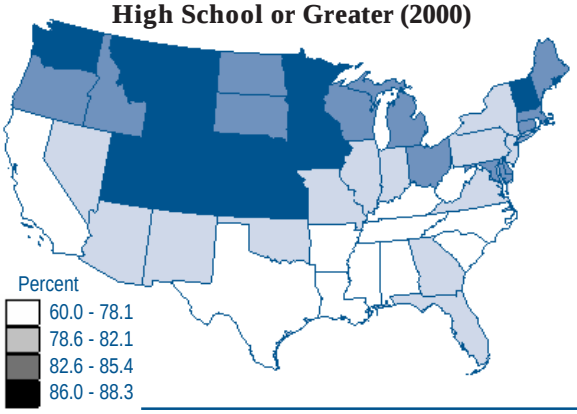


Figure 12: Percent of population over 25 with High School or Greater (2000)

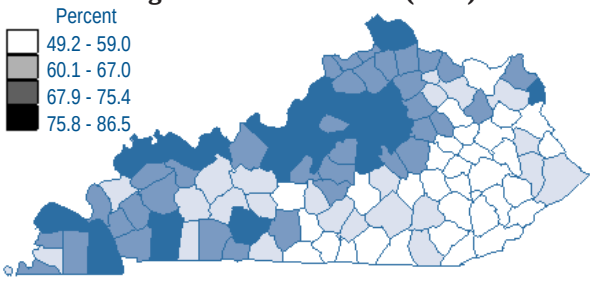


Figure 13: Percent over 25 with Bachelor's Degree or Greater (2000)

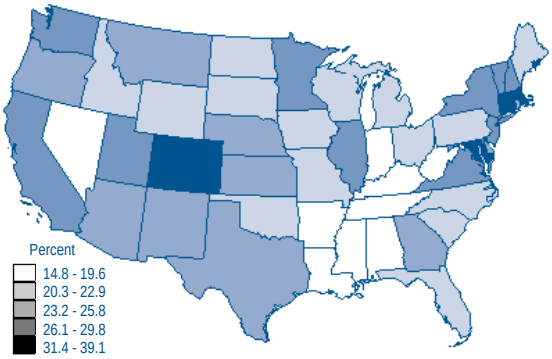


Figure 14: Percent over 25 with Bachelor's Degree or Greater (2000)

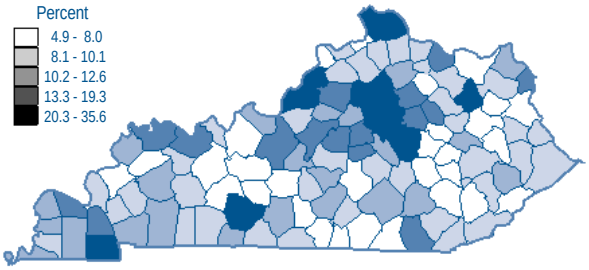


Table 8: Educational Attainment of Residents of Kentucky and its Neighbors

	Less than High School		High School or Above		Some College		Some College or Associate		College or Above	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Kentucky	**25.9**	**9**	**74.1**	**9**	**18.5**	**8**	**23.4**	**8**	**17.1**	**8**
United States	19.7	6	80.4	6	20.9	3	27.2	2	24.4	3
Illinois	18.4	3	81.4	4	21.6	2	27.7	1	26.1	2
Indiana	17.8	2	82.1	2	19.7	7	25.5	6	19.4	7
Missouri	18.6	5	81.3	5	21.9	1	27.0	3	21.6	4
Ohio	17.0	1	83.0	1	19.8	6	25.7	5	21.1	5
Tennessee	24.1	7	75.9	7	20.0	5	24.7	7	19.6	6
Virginia	18.5	4	81.5	3	20.4	4	26.0	4	29.5	1
West Virginia	24.8	8	75.2	8	16.6	9	20.9	9	14.8	9

Share of Employment, by Industry, of Kentucky and its Neighbors, 2003[4]

Table 9 shows the share of employment by industry of Kentucky and its neighbors for 2003. As percentage of employment, Kentucky ranked higher than the U.S. in Farm, Mining, Construction, Manufacturing, Transportation and Public Utilities, Retail, Military and State Government and below the U.S. in Ag. Services, Wholesale, Finance, Insurance, and Real Estate and Services.

Table 9: Share of Employment, by Industry, of Kentucky and its Neighbors, 2003

	United States		Kentucky		Illinois		Indiana		Missouri		Ohio		Tennessee		Virginia		West Virginia	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Farm	1.9	6	4.8	1	1.4	9	2.2	5	3.5	2	1.5	7	3.0	3	1.4	8	2.5	4
Private	84.4	5	80.4	8	86.6	1	86.1	3	83.1	6	86.5	2	85.0	4	80.4	9	80.4	7
Ag. Services	1.3	1	1.2	2	0.9	6	0.9	7	1.0	4	0.9	8	0.9	5	1.1	3	0.8	9
Mining	0.5	3	1.0	2	0.2	6	0.2	7	0.2	8	0.3	4	0.2	9	0.3	5	3.0	1
Construction	5.7	6	5.8	3	5.0	9	5.8	5	5.8	4	5.2	8	6.0	2	6.4	1	5.5	7
Manufacturing	11.4	7	14.1	4	12.9	5	18.9	1	11.7	6	16.1	2	14.8	3	9.1	9	9.5	8
Tranportation And Public Utilities	4.9	6	5.4	4	5.5	3	4.8	7	6.0	2	4.4	9	6.0	1	4.8	8	5.0	5
Wholesale	4.5	5	4.0	7	5.2	1	4.3	6	4.6	4	4.7	2	4.6	3	3.7	9	3.7	8
Retail	16.4	7	17.1	4	15.5	9	17.8	2	16.7	6	17.7	3	16.8	5	16.1	8	17.9	1
Finance, Insurance, and Real Estate	7.9	2	5.6	8	9.1	1	6.3	7	7.5	3	7.3	4	6.8	6	7.1	5	5.3	9
Services	32.0	2	26.2	9	32.3	1	27.1	8	29.5	6	29.9	4	28.8	7	31.9	3	29.6	5
Federal Government	1.7	4	1.7	5	1.3	7	1.2	9	1.8	3	1.3	8	1.5	6	3.7	1	2.5	2
Military	1.2	3	2.1	2	0.8	6	0.6	8	1.1	5	0.5	9	0.7	7	3.8	1	1.1	4
State Government	3.0	6	3.9	2	2.2	9	3.0	5	3.2	4	2.5	8	2.6	7	3.4	3	5.2	1
Local Government	7.7	4	7.2	7	7.7	2	6.9	9	7.3	5	7.7	3	7.1	8	7.3	6	8.2	1

(Endnotes)

1 Population data for 2003 is from the U.S. Census Bureau Population Projections for 2003, www.census.gov

2 Historical and current data as well as definitions are from the 2000 Census, www.census.gov

3 Population, demographic, income and earnings data for 2000 is from the 2000 census, www.census.gov

4 Share of employment data is from the U.S. Bureau of Economic Analysis REIS, www.bea.gov

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