

Forecast for the Economy, 2004 - 2006

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The Kentucky economy is forecast to follow the national economy into a period of strong post-recession growth in 2004, and solid growth in 2005 and 2006. With strong growth, Kentucky employment is expected to reach pre-recession levels by mid-2005. However, recession period job losses in manufacturing are expected to be permanent. Unemployment rates will fall slowly over the next three years.

Introduction

Even in prosperous times, businesses and workers are impacted by the outlook for the economy. Profit margins for firms and the potential for promotion and advancement for workers can rise substantially with a strong growth outlook. The interest in the outlook only rises in difficult economic times as the outlook affects more fundamental economic questions such as restructuring and job opportunities for displaced workers and the potential for business survival. The Kentucky economy has been in such a difficult time for most of the last three years, creating heightened interest in the current outlook, and raising a key question: With news about the economy improving in recent months, will these positive trends continue? Or, perhaps more to the point, how confident can we be that these trends will continue?

This article begins with a discussion of the national economy. The Kentucky economy has diversified substantially over the last few decades, and increasingly mirrors the national economy. The state's economy, therefore, is likely to reflect developments in the national economy and the outlook for the national economy becomes a first step in understanding the Kentucky economic outlook.

The outlook for the Kentucky economy is examined next. This outlook is developed using the University of Kentucky State Econometric Model, a model of the state economy that has been in use since the mid-1990s. A forecast is produced for 2004, as well as for 2005 and 2006, of the key aggregate economic variables of the Kentucky economy including total employment, manufacturing employment, income growth, and population growth.

A final section evaluates the recent forecasting performance of the University of Kentucky State Econometric Model. The predictive power of the model for estimating key aggregate variables such as employment growth and income growth is examined for the last seven University of Kentucky forecasts.

The National Economy

Forecasts for the national economy in the current period are strongly influenced by the business cycle, and in particular, recovery from the recent recession of 2001. Recovery from that recession has unfolded slowly but has been gaining momentum. The economy finally may be reaching the type of rapid growth typically expected after a recession. The next year as a result may be characterized by rapid growth as it contains the strong growth quarters of the recovery period of the business cycle.

High growth periods such as 2004 are expected after a recession since economic decline during a recession pulls the economy below its capacity as dictated by its long-term path of growth. This long-term growth rate is between 2% and 3% and is determined by the rate of labor force growth (i.e., population growth) and productivity growth, which is tied to capital formation and innovation. After a recession, moderate growth in the economy is insufficient to pull the economy back to its trend growth rate. A period of rapid growth must occur to bring the economy back to its capacity for production and employment.

A period of strong recovery did not emerge quickly after the recent recession. The recession lasted from January 2001 through November 2001 according to the National Bureau of Economic Research (NBER). Growth was halting in the period that

Figure 1: Gross Domestic Product Growth, Quarterly, Last 3 Years



Source: <http://www.economicindicators.gov>

followed, as is seen in Figure 1. Gross domestic product (GDP) growth was moderate during late 2002 and the first half of 2003.

The pace of recovery accelerated in late 2003. The rapid increase in investment and overall GDP growth suggests that the economy is finally beginning to experience the spurt of rapid growth that typically follows a recession. Most forecasts for the economy project strong growth continuing through 2004. This rapid growth is expected to be fueled by a rebound in private business investment in capital goods and property. This most volatile component of the economy is finally beginning to reach the rapid growth expected after recession. Continued low interest rates also are expected to fuel further growth in consumer spending on final goods and services.

The combination of strong growth in private business investment and consumer spending is what will drive above-average economic growth during 2004.

Indicators of Future Growth

Several indicators portend the expectation of rapid growth in the next year. The index of

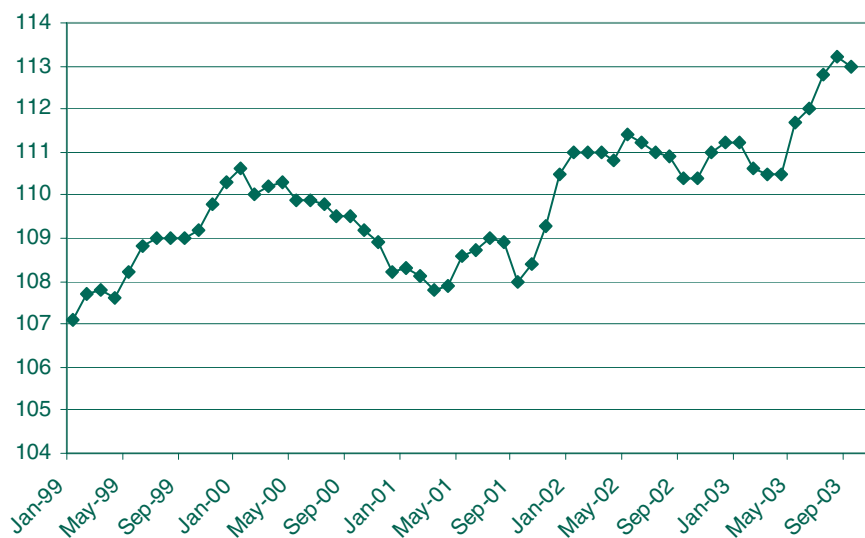
leading economic indicators has risen steadily during 2003. This index is designed to predict the change in economic activity 6 to 9 months into the future. Steady improvement from April 2003 to September 2003 as depicted in Figure 2 suggests sustained improvement in the national economy in 2004, or at least the first half of the year. The stock market is another key leading indicator of economic activity. Investors are thought to be among the most accurate at forecasting economic recovery. Their beliefs are reflected in stock market valuations. As Figure 3 illustrates, the stock market, as measured by the

Standard & Poors' 500 index, has risen steadily over the last 6 months.

How much recovery makes a Recovery?

These indicators, and others suggesting strong growth next year, are reliable, but they also are not perfect. Further, both the leading indicators index and the stock market are effective at predicting changes in economic growth 6 to 9 months into the future. Thus, even if accurate, these indicators do not predict whether growth will be sustained over a long period. Such a scenario has played out in the U.S.

Figure 2: Index of Leading Economic Indicators



Source: The Conference Board

economy recently. There were improvements in the index of leading indicators and the stock market at the end of 2001 and the first quarter of 2002, as Figures 2 and 3 indicate. There also was an improvement in overall economic growth as

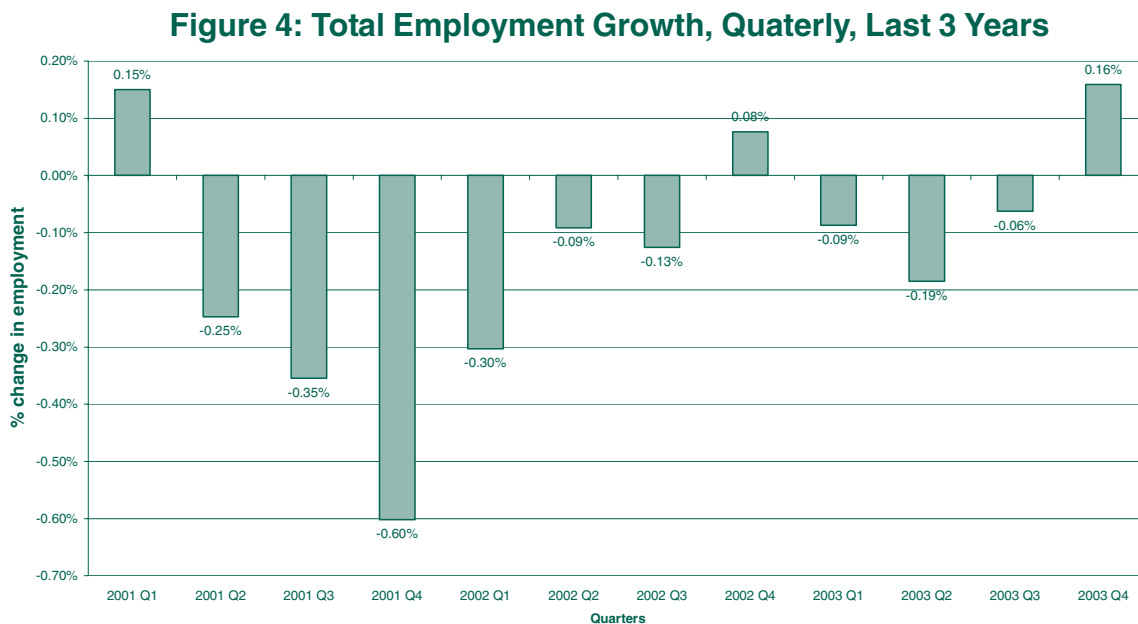
Employment

There are factors that suggest some caution towards the economy in 2004. Job losses are the chief



measured by GDP around the same time, as indicated in Figure 1. But, this improvement was not sustained as overall growth in the economy slowed considerably in late 2002 and the first quarter of 2003. As Figure 4 illustrates, employment also fell steadily throughout this period, except for slight increases in the fourth quarters of 2002 and 2003. This pattern of “false” recovery could occur in 2004.

concern among these. The magnitude and duration of employment loss over the last few years has been a key feature of the recent recession and the two years that followed. As depicted in Figure 4, the economy has lost over 1.5 percent of its employment since January 2001, when the recession period began, and sustained job losses even after the recession ended in late 2001. These developments raise a key question for the forecast for 2004 and beyond. Even if the economy grows rapidly in 2004, will there be an



Source: <http://data.bls.gov/cgi-bin/srgate>

extension of the job gains seen in the last few months to create a sustained period of job gain?

The answer to this question depends on at least three key factors. The first is very much related to the business cycle, and the strength of the recovery. Will the burst of growth and recovery anticipated for 2004, if it occurs as expected, be sufficiently strong to create employment regardless of any restructuring in the economy that might discourage job growth? A very rapid recovery may lead to rapid job growth even if the labor market, or portions of it, is changing in ways that will discourage net employment growth in the next few years.

The second and third factors are related to that restructuring. The second factor relates to manufacturing employment. Potential structural changes in the organization of manufacturing employment may be leading to substantial job losses in the industry. In particular, manufacturing job losses accounted for more than two-thirds of total job losses in the U.S. economy over the last three years. These losses may reflect structural factors such as a permanent, significant increase in productivity in the industry that will allow manufacturing output to expand with fewer employees. This productivity growth may be driven in part by increased innovation and the increased use of skilled workers in the manufacturing industry, but also may reflect the related phenomenon that lower skill and less productive parts of the manufacturing industry are moving overseas. Both developments have and will continue to raise the standard of living in the United States, but may limit manufacturing job growth in the United States even during the recovery period. Job growth is possible without significant growth in the manufacturing industry but rapid job growth may be difficult.

The third factor relates to the increased outsourcing of service industry employment to overseas locations. This development includes call centers and technical support occupations but also includes skilled work activities in the software, engineering, and financial services industries. These developments could mean that there will be anemic growth during the recovery in these higher skilled services industries along with developments in manufacturing.

Summary and National Forecast

Favorable developments in the business cycle should yield strong growth in the national economy during 2004. Regular patterns in the business cycle as well as current measures for key economic indicators suggest this. Concerns about the potential for rapid growth in 2004 principally are related to whether employment growth will be strong next year.

This is the general outlook in most forecasts for the national economy generated using econometric models, including the forecast from Global Insight, Inc. Global Insight is the source for the national forecast data on employment, industrial production, and income used as inputs to drive the University of Kentucky State Econometric Model (UKSEM). In its October 2003 *U.S. Economic Outlook*, Global Insight forecasts a rapid 1.8 percent annual growth in employment, and 5.4 percent annual income growth over the next 3 years. The forecast assumes strong growth in both consumer and business investment. Key assumptions include modest increases in short-term interest rates by the Federal Reserve beginning in late summer of 2004, and inflation of less than 2 percent over the period. The federal budget deficit is expected to remain above \$300 billion per year.

The Kentucky Economy

The forecast for the Kentucky economy follows that for the national economy. Strong economic growth is forecast for the year 2004. The rate of growth is forecast to moderate in 2005 and 2006. The combination of three solid to strong years of growth is forecast to slowly drive down the unemployment rate, and employment should return to pre-recession levels by 2005.

The Last Few Years

Kentucky, however, also has followed the national economy over the last few years, and has experienced substantial job losses. In other words, Kentucky has been a full participant in the recent recession in the national economy. As seen in Figure 5, between July 2000 and July 2003, the national economy lost 1.6% of its employment.

During the same period, the Kentucky economy lost 2.7% of its employment. This experience contrasts sharply with the recession of the early 1990s when Kentucky, buoyed by a rapidly expanding auto manufacturing industry, suffered a relatively small decline in employment during the national recession.

have been more effective in countering losses in manufacturing.

The Forecast: Total Employment and Manufacturing Employment

**Figure 5: Growth in NonFarm Employment
United States and Kentucky
Recent History and Forecast**



Source: University of Kentucky State Econometric Model

Growth in employment is often a key indicator of economic progress, and in some ways appropriately so, since most Kentuckian's principal source of income is from wages and salaries earned in the labor market. More comprehensive measures of economic growth exist, such as Gross State Product (GSP), but given the focus on job loss during the recent recession, this article will focus on prospects for employment growth.

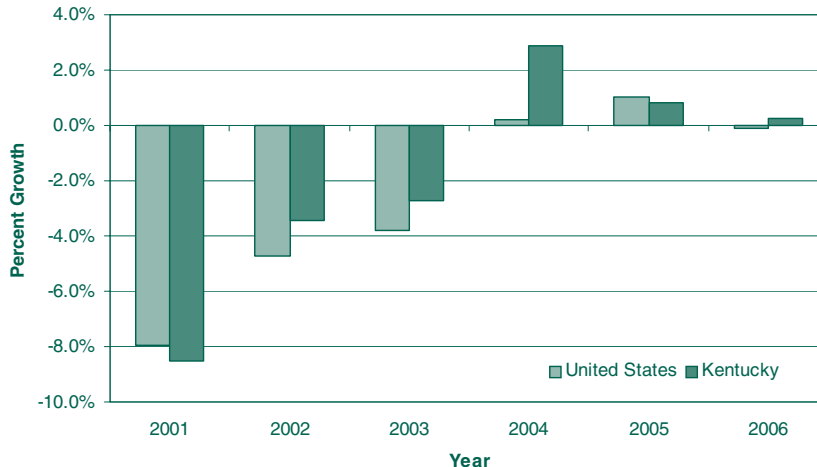
Figure 5 shows the growth rate of total employment in Kentucky over the last few years and forecast through 2006. All comparisons are on

Both state and national employment have been severely affected by declines in the manufacturing industry. As seen in Figure 6, the U.S. manufacturing industry lost 15.5% of its employment between July 2000 and July 2003. This is as steep a drop as occurred during the deep recession of the early 1980s. The Kentucky economy lost 13.3% of its manufacturing industry employment during the same three year period.

a fourth quarter to fourth quarter basis, so growth for 2001 reflects employment change from the fourth quarter of 2000 through the fourth quarter of 2001. Kentucky lost employment at a faster rate than the

Job loss in Kentucky during the last three years, as nationally, is largely driven by losses in the manufacturing industry. The sharper job losses in Kentucky, however, cannot be accounted for by declines in manufacturing. Nationally, other industries

**Figure 6: Growth in Manufacturing Employment
United States and Kentucky
Recent History and Forecast**



Source: University of Kentucky State Econometric Model

nation from 2001 to 2003, but is expected to grow faster than the nation during the expansion period from 2004 through 2006. Kentucky employment growth is forecast to reach 2.1 percent in 2004, and 1.9 percent in both 2004 and 2005. This strong growth rate will help Kentucky non-farm employment to return to above its pre-recession level by late 2005.

Figure 6 illustrates that the manufacturing industry is expected to contribute to Kentucky's more rapid employment growth rate relative to the nation. The manufacturing industry in Kentucky is forecast to outperform the national manufacturing industry in two of the next three years, and particularly in 2004, when manufacturing employment is anticipated to rise by 2 percent in Kentucky between the fourth quarter of 2003 and the fourth quarter of 2004. However, note that, unlike with total non-farm employment, manufacturing employment is not likely to recover to its pre-recession levels during the recovery period. Only a fraction of what was lost will be regained, and by the end of the forecast period, growth in manufacturing employment will be near zero.

Unemployment

A return to job growth should help drive unemployment rates lower nationally and in Kentucky. But, as Figure 7 illustrates, unemployment rates will decline quite slowly. The U.S. unemployment rate will fall from its peak of 6.1 percent in 2003 to 5.7 percent in 2006. The Kentucky unemployment rate will fall from its peak of 5.9 percent in 2003 to 5.2 percent.

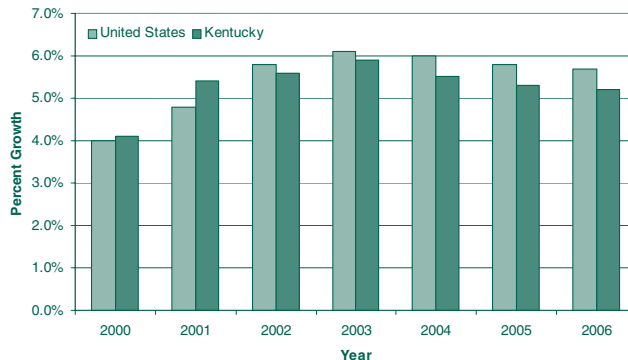
Slow improvement will occur for several reasons. First of all, growth in population implies that the economy must always create new jobs in order to absorb new workers, so that positive job growth is needed simply to maintain the current unemployment rate. Second, many workers may have given up on finding employment over the last few years, or utilized a period with a weak economy to receive schooling or meet needs at home. These workers are not counted in the unemployment figures, but will be as they begin to re-enter the labor market. Additional job growth is also required for these workers before the unemployment rate can decline.

Population

Population growth is another key measure of an economy. Forecasts for Kentucky call for lower population growth in the state than nationally, as is seen in Figure 8. Population is forecast to grow by roughly 0.6 percent per year in Kentucky versus 1.0 percent nationally, as has been the case since the year 2001. The rate of population growth is falling slowly both in Kentucky and the nation, likely in response to the aging of the population across the country.

This slower rate is not due to a weaker economy in Kentucky, as was illustrated in the earlier tables. Instead, slower population growth in Kentucky is in part the result of a slower natural rate of population growth in Kentucky, particularly in the Eastern Appalachian and the Western part of the state. These areas have an older than average population, in large part due to out-migration in previous decades. An older population means a higher mortality rate and a lower birth rate, implying that population will grow more slowly even without considering current migration patterns. Kentucky also received a below average share of international migrants to the United States. This is facilitated both by its location far from the typical ports of entry on the southern border and the east and west coasts of the nation, and its smaller existing immigrant population, which attracts fewer family members. All of these factors lead to an expectation of slower population growth in Kentucky even if a relatively strong economy would be expected

**Figure 7: Unemployment Rates
United States and Kentucky
Recent History and Forecast**

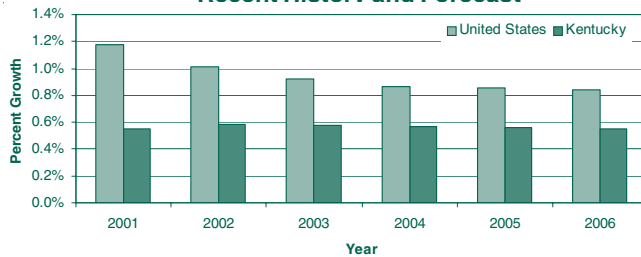


Source: University of Kentucky State Econometric Model

to help the state capture its share of internal migration between states.

As population grows steadily, what is the performance of income per person? Nominal per capita income is forecast to grow by 4.7 percent in

**Figure 8: Growth in Population
United States and Kentucky
Recent History and Forecast**



Source: University of Kentucky State Econometric Model

Kentucky over the next three years. Real (after adjusting for inflation) per capita income is forecast to grow by 2.8% per year. These high growth rates in income per person, which are on a par with national growth rates, are possible because rising productivity allows real wages to grow quickly. As implied by growth in population and nominal per capita income, total nominal income growth is forecast to average just over 5 percent per year from 2004 through 2006.

Note on Forecast Accuracy

The forecast figures presented above are estimates among a range of possible outcomes. Future growths in income, employment or population are likely to differ at least modestly from forecasts. As long as major assumptions about the economy are correct (i.e., the economic recovery will take hold), forecast growth should be close to actual growth. Large differences would emerge if major assumptions are incorrect.

In any case, it is useful to know the typical size of forecast error when interpreting forecasts such as those in Figure 5-8 above. Forecast errors can be used to build a range around forecast estimates. For example, if the average difference between forecast employment growth and actual employment growth has been 0.4 percent, then a forecast of 2.1 percent job growth for 2004 might

be interpreted as a forecast of growth between 1.7 percent and 2.5 percent.

Table 1 shows summary information on forecast accuracy since the UKSEM was introduced in 1996. Results are presented for the two principal economic indicators of non-farm employment and total personal income. Results show the average differences between the forecast percent growth and the actual percent growth. The UKSEM generates forecasts for three years into the future. Table 1 presents forecast accuracy results separately for the first year and for all 3 years together.

Results are first presented for the entire period, beginning in 1996, and second for the period through 2000, before the recent recession began. Like most forecasting models, the UKSEM failed to forecast the recent recession, and significant forecast errors occurred during 2001 and 2002. Results excluding these years are presented to give an idea of the size of the forecast error during years when there is no error in major forecast assumptions, such as an unanticipated recession.

Forecast errors including the recession period averaged nearly 1.0% for non-farm employment. This suggests that employment could be a full percent higher or lower than forecast. Taking the forecast job growth of 2.1 percent in 2004, results in Table 1 suggest a range from 1.2 percent to 3.0 percent. For real income, forecast growth is on average 1.5 percent higher or lower than actual growth, so a forecast of 5.3 percent annual growth would fall in a range of 3.8 percent to 6.8 percent.

**Table 1
Forecast Accuracy**

Period/Variable	Forecast Error	
	1st Year	3 Year Average
Full Period 1996 - 2002		
Non-farm Employment	0.9	1.0
Total Personal Income	1.3	1.5
Pre-Recession Period 1996-2000		
Non-farm Employment	0.4	0.8
Total Personal Income	1.5	1.8

Source: UKSEM, U.S. Department of Labor, U.S. Department of Commerce

For employment growth, these findings for the 1996-2002 forecasts reflect more modest errors in the pre-recession period from 1996-2000, and larger errors during the recession years of 2001 and 2002. For example, modest job growth was forecast for 2001 and 2002, but job losses occurred instead, so forecasts were off by 2 or 3 percent. In the pre-recession period, employment forecasts were on average off by just 0.4 percent. Forecast errors for total personal income, however, were roughly as large in the pre-recession period as for the entire period.

Overall, forecast errors were modest for employment during the pre-recession period, but were larger for income growth throughout. But, in both cases, errors were not so large as to cast doubt on the basic conclusions from the forecast, that is, whether or not there should be growth, and if so, whether growth will be rapid or moderate.

Conclusion

The Kentucky economy is forecast to follow the national economy into a period of strong post-recession growth in 2004, and solid growth in 2005 and 2006. This forecast is supported by leading indicators of the economy. The primary risk is that the labor market will remain weak in 2004 and sap strength from the national and state economic recovery.

In the 2004 through 2006 forecast period, income and employment growth are expected to be strong, with Kentucky employment reaching pre-recession levels by 2005. Manufacturing jobs, however, are not expected to grow rapidly. Recession period job losses are forecast to be permanent for manufacturing. Job growth also is expected to drive down the unemployment rate only modestly, with the unemployment rate still above 5 percent in 2006.