



## Using Employment Data to Better Understand Your Local Economy

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### Tool 2. Chart the Historical Performance of Key Economic Indicators



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# Summary

Tracking the performance of key economic indicators over time can help you identify growing and declining sectors. You can use trend analysis to identify new opportunities.

## Overview: Tracking Economic Trends

While a snapshot is a good way to capture today's economy, understanding how the local economy has changed over time is important for several reasons. First, *trend analysis* allows you to examine long-term performance—identifying indicators that have shown strength over time and those that are declining. Using trend analysis to identify important trends will help you get started in implementing actions that further develop areas of strength, or address new or long-standing problems.

Second, trend analysis helps communities identify “shocks” to important local indicators (such as a sudden upsurge in unemployment). If the data shows some quick, dramatic change, you'll probably want to know why this happened (for example, perhaps a local factory moved overseas). Recognizing the economic factors that influence local industries can strengthen the local ability to prevent shocks, or at least quickly respond to them.

Third, trend analysis can either raise or alleviate concerns. For example, a high local unemployment rate may be a historic local problem, suggesting that job creation is imperative. Alternatively, an increase in unemployment may just mirror national business cycle trends, and better times may be inevitable.

A final useful application of trend analysis is in identifying growth opportunities. Perhaps some economic sectors have recently increased in importance. Once again, you'll want to ask “why?” It may be that your community is especially well suited for some particular “new industry.” In this case, local economic development efforts might focus on developing a niche.

## Bar Charts

One useful way to analyze data over time is to examine trends relative to some baseline. With a bar chart you can look at how an indicator has changed between two time periods (see Table 1 for an example). These charts are especially useful for data available only periodically, such as census data.

## The Index of Growth

The *index of growth* is another tool that provides a cumulative measure of change over time and is an especially useful way to investigate local economic behavior relative to other economies (such as the state or nation). Table 2 is an example of an index of growth.

The index is based on local economic performance relative to some base year (here 1970), and is computed according to the following formula (with subscripts identifying region (r) and year (t)):

$$\text{Index}_{r,t} = (Y_{r,t}/Y_{r,1970}) \times 100$$

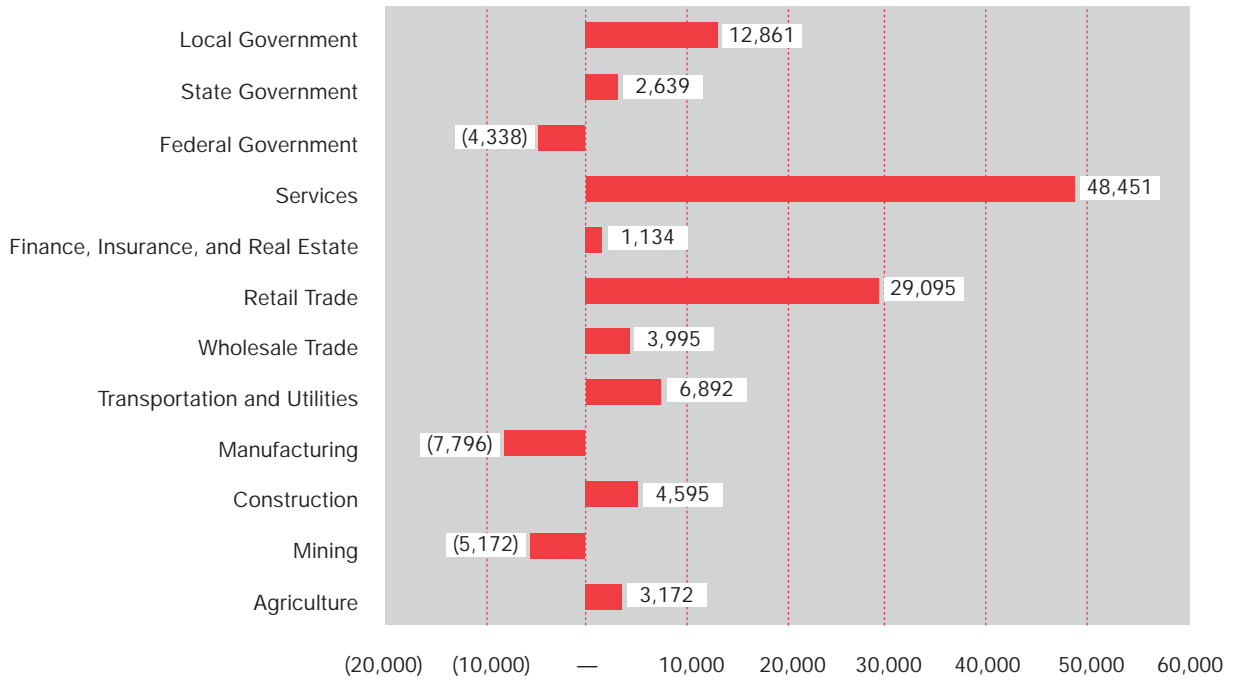
where

Y	=	Economic variable (employment, population, etc.)
r	=	Region
t	=	Year
1970	=	Base Year (1970)

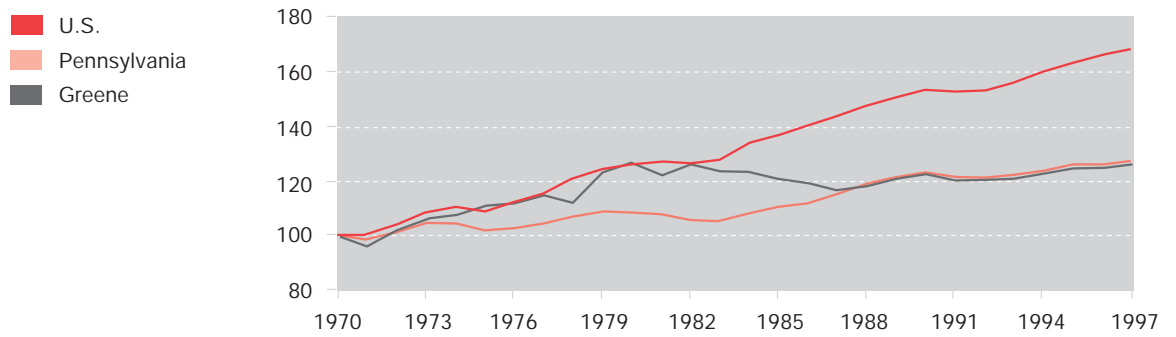
This index compares the level of a particular economic variable to its level at the beginning of the period. The index for the base year is always 100. For example, if total employment is 5,000 in 1970 and 6,000 in 1990, then the value of the index in 1990 is  $(6,000/5,000) \times 100 = 120$ . In this example, employment for the region increased by 20 percent (120 - 100). You can calculate the index for any number of years and plot the resulting values in a graph.

Using this measure of economic performance has three advantages. First, placing all regional data on an index basis allows a direct comparison between regions. Second, changes in the value of the index from one year to the next can be interpreted as a growth rate. Here fast growth and slow growth can be identified. Finally, by examining the index over a period of time, you can establish the relative stability of the local economy.

**Table 1. Industry Employment Growth 1990–2000.**



**Table 2. Employment Growth Index (1970 = 100).**



## How This Information Is Used in Economic and Community Development

Once again, you should spend some time interpreting the data. When looking at employment trends, for example, consider the following questions:

1. Which local industry has shown the greatest growth? How has this growth compared to that of the state? The nation? What do you think has caused this growth?
2. Have there been any surprises, such as a sector that has grown or declined faster than anticipated? Why do you think this is so?
3. Are there any aspects of local change that are similar to the state or the United States? Are there any that are different? Why do you think there are differences?
4. Does this information support popular perceptions? For example, in many communities services have grown to be the largest share of local employment.

Looking at a variety of indicators is also useful. For example, after identifying a “fast-growing” industry, you might want to also look at wages in that industry—the jobs may not be very high paying, and the growth may not be as great of a local boon as it appeared.

In general, recent trends tend to maintain themselves, at least in the short term. By understanding historical growth patterns, you are in a better position to identify not only the strengths and weaknesses of the local economy, but also the needs and potential opportunities for development.

## For More Information

Some basic profile data for Pennsylvania is available at [cecd.aers.psu.edu/profile.htm](http://cecd.aers.psu.edu/profile.htm).

The state’s Center for Work-force Investment Analysis at the Department of Labor and Industry is Pennsylvania’s designated provider of employment statistics ([www.dli.state.pa.us](http://www.dli.state.pa.us)). On their Web

site you can find a variety of statistics related to employment, wages, and unemployment for the state, metropolitan areas, and counties.

Other potential data sources are outlined in the section on indicators in the introduction.



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Penn State College of Agricultural Sciences research, extension, and resident education programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

This publication is available from the Publications Distribution Center, The Pennsylvania State University, 112 Agricultural Administration Building, University Park, PA 16802. For information telephone 814-865-6713.

Issued in furtherance of Cooperative Extension Work, Acts of Congress May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture and the Pennsylvania Legislature. T. R. Alter, Director of Cooperative Extension, The Pennsylvania State University.

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Produced by Information and Communication Technologies in the College of Agricultural Sciences

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