



October 2005

Industry Cluster Trend Analysis

**Centre, Clinton, Columbia, Lycoming,
Mifflin Montour, Northumberland,
Snyder and Union Counties**

**cpwdc**
...the workforce corporation

The following trend analysis was completed for each of the Central Region's primary industry clusters:

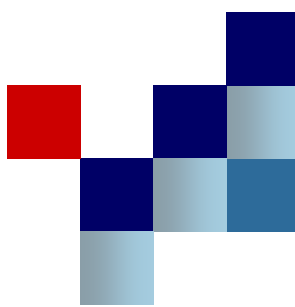
- Manufacturing
- Education
- Healthcare
- Lumber and Wood Products

Using data contained within the Regional Data Analysis Tool (RDAT) developed by the Center for Workforce Information and Analysis, this report examines quarterly data from 2000 to 2004 for the following elements:

- *Employer Units*: number of individual establishments or physical locations of a certain economic activity.
- *Employment*: number of jobs.
- *Quarterly Wages*: average earnings across all jobs within a cluster during a given quarter, which will reflect seasonal trends. Quarterly wages are weighted to calculate the average annual earnings.
- *Estimated Quarterly Cluster Payroll*: estimated payroll based on quarterly employment and average quarterly earnings.
- *State Location Quotient*: a statistical measure comparing the concentration of employment in a local industry cluster to the concentration of employment in the same cluster statewide.

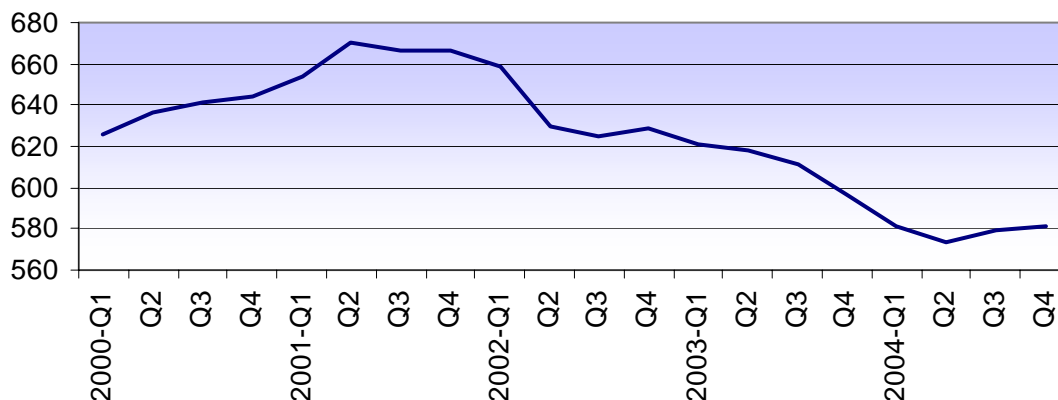
The data can be used to assess past movements in the clusters and to develop seasonal or trend-based responses.

*All data, unless otherwise noted, is based on ES202 statistics from the Center for Workforce Information and Analysis, Pennsylvania Department of Labor and Industry.



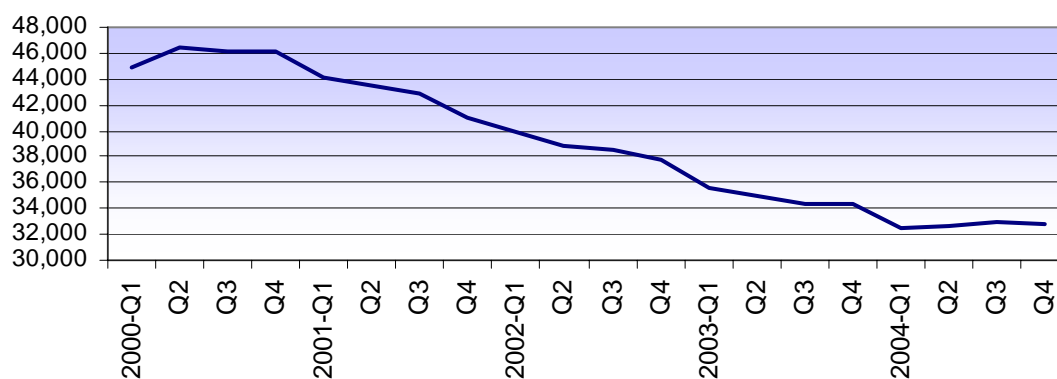
Diversified Manufacturing

Employer Units (2000-Q1 to 2004-Q4)



- The total number of employers in the Manufacturing cluster decreased by 45 between Q1 of 2000 and Q4 of 2004. The total number does not appear to be affected by seasonal employment changes.
- A declining trend in employer units began in 2001 Q3.
- The ratio of new jobs to the number of new employers is 270.

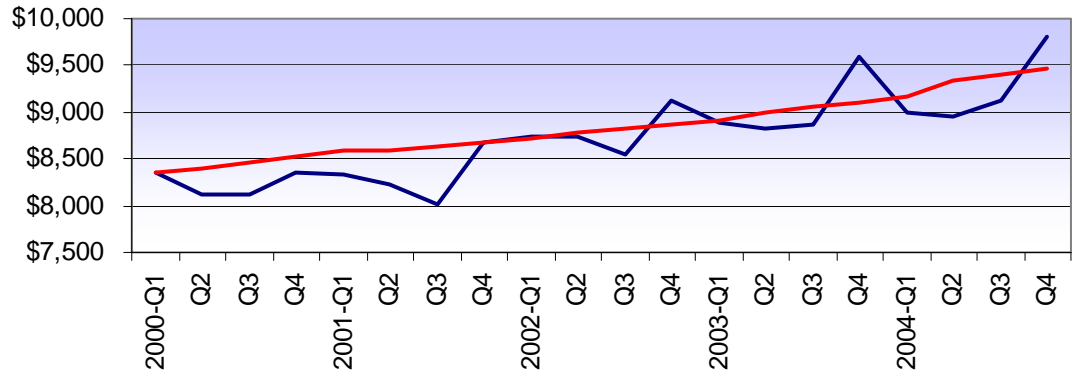
Employment (2000-Q1 to 2004-Q4)



- Overall employment in the Manufacturing cluster decreased absolutely by 12,145 jobs during the time period, but when averaged over the 5 year period, the total decline was 13,265.
- There do not seem to be any seasonal effects on employment within the cluster, which has demonstrated a decreasing trend since 2001.

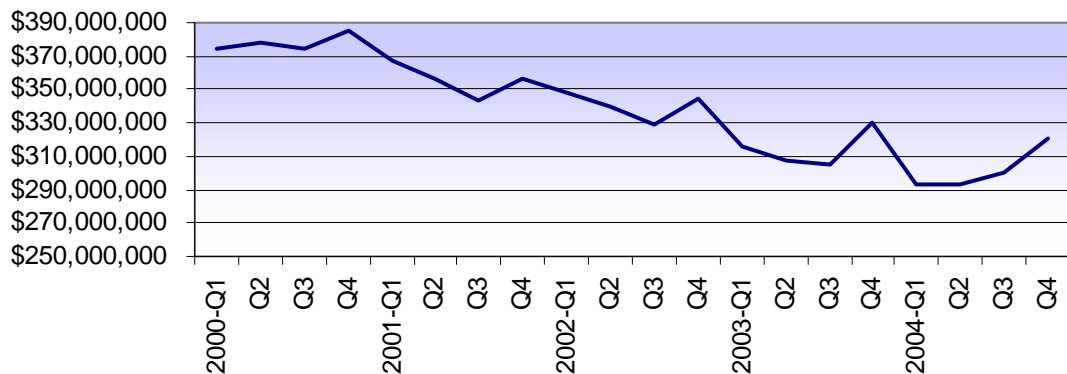
Diversified Manufacturing

Quarterly Wages (2000-Q1 to 2004-Q4)



- During this time period, average quarterly wages increased by \$1,452.
- When holding wages constant in 2000 dollars, average quarterly earnings increased by 1.8% between 2000 and 2004.
- The red line demonstrates how wages would have moved based on quarterly changes in the inflation rate benchmarked to 2000 Q1. Seasonality is factored out of the analysis to demonstrate an overall trend in wages. While overall wages have increased with inflation, there have been quarters where wages have been below the inflationary trend.

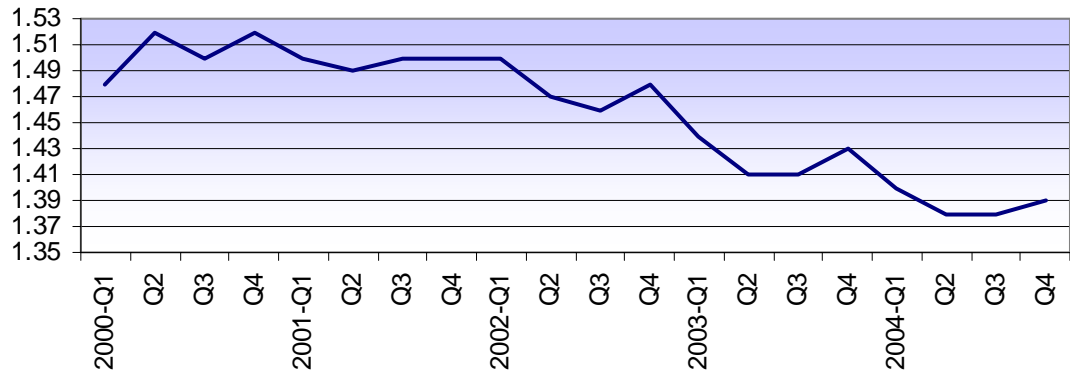
Estimated Cluster Payroll (2000-Q1 to 2004-Q4)



- Payroll is a direct function of employment and wage changes.
- Overall, the estimated payroll in the Manufacturing Cluster decreased by \$53.8 million in nominal dollars during the time period of 2000 Q1 to 2004 Q4.
- Decreases in employment and steady wages resulted in a 27.4% decrease in payroll, when analyzed in 2000 constant dollars, during the same time period.

Diversified Manufacturing

State Location Quotient (2000-Q1 to 2004-Q4)

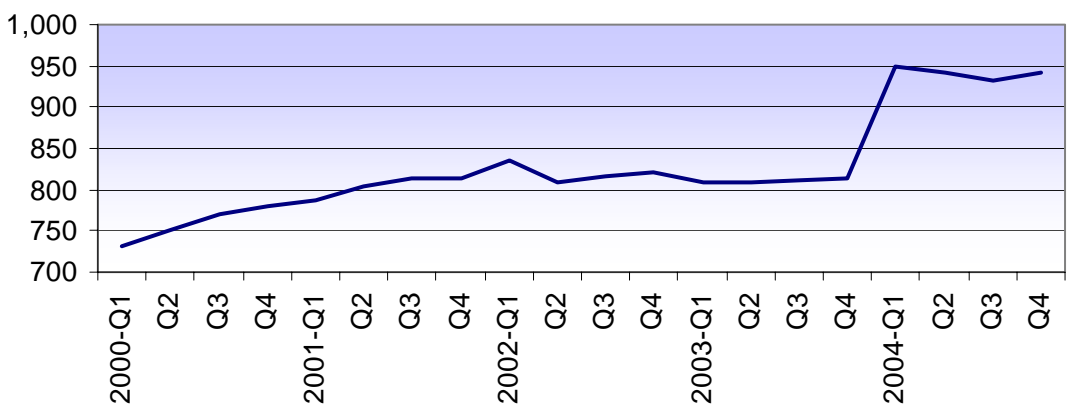


- Location Quotient (LQ) is a statistical measure that compares the concentration of employment in a local industry cluster to the concentration of employment in the same cluster statewide or nationally. An LQ of greater than 1.0 suggests that a locale has a competitive advantage within a cluster and is producing goods or services in excess of the local consumption, thus resulting in exportation of goods or services. An LQ of less than one suggests that an industry is falling behind local demand and is importing the good or service.
- Over the five-year period, the state LQ decreased by 7.8%.
- The cluster LQ was consistently above 1.0 during the time period although it has demonstrated a decreasing trend since late 2000.
- There appears to be a peak in the state LQ during Q4 of each year, which indicates that during the winter months, the region retains a higher concentration of jobs than does the state.



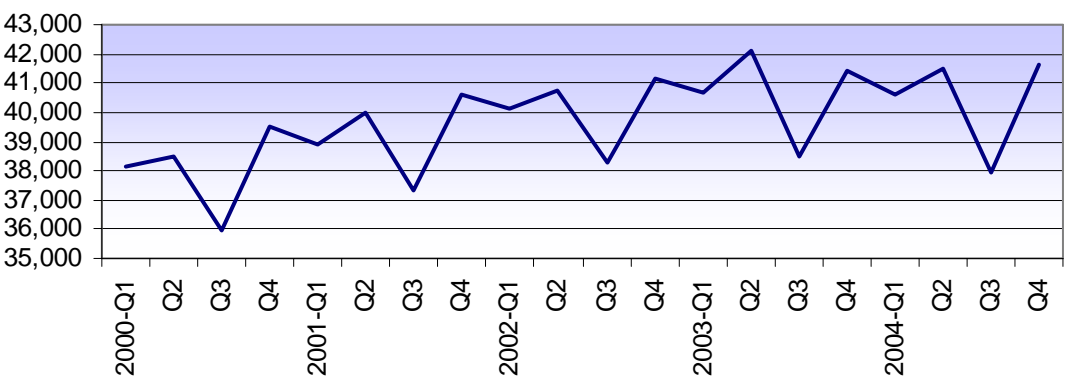
Education

Employer Units (2000-Q1 to 2004-Q4)

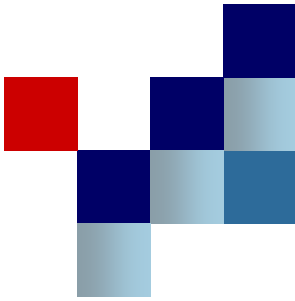


- The total number of employer units in the Education cluster increased by 211 between Q1 of 2000 and Q4 of 2004.
- Between 2000 and 2003, the number of employer units remained fairly consistent. However, beginning in 2004, the number of units increased dramatically. This increase is most likely due to a change in coding or reporting policy because employment does not demonstrate the same increasing trend.

Employment (2000-Q1 to 2004-Q4)

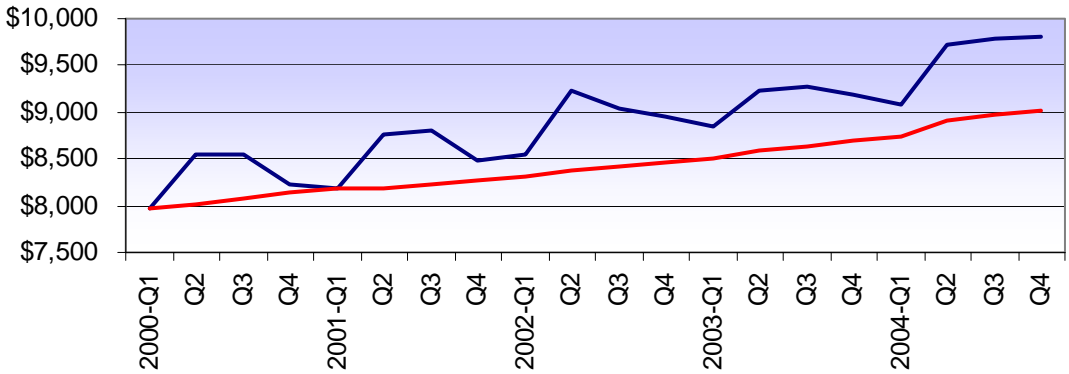


- Overall employment within the Education cluster increased absolutely by 3,466 jobs during the time period, but when averaged over the 5 year period, the total increase was 2,364.
- During Q3 of each year, there is a decrease in employment. This trend is due to the nature of the jobs within the industry, specifically the positions that are only available for the duration of the school year. During Q3, these jobs are temporarily suspended, which causes a decrease in employment. However, with the start-up of school, employment increases.



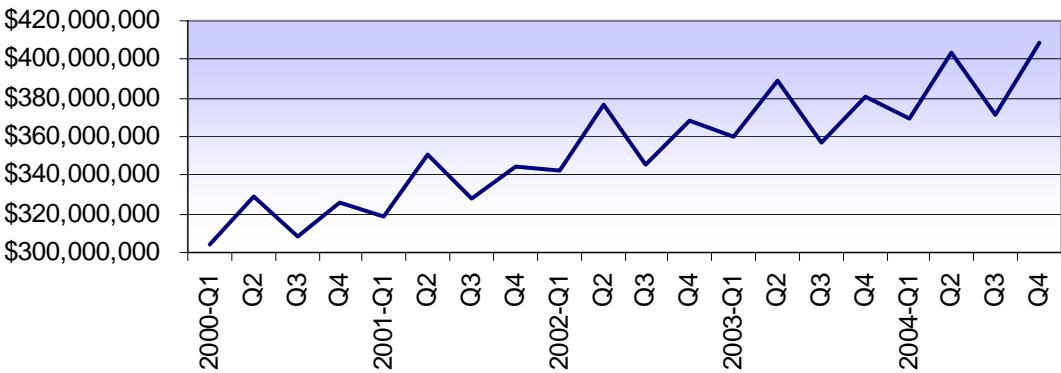
Education

Quarterly Wages (2000-Q1 to 2004-Q4)



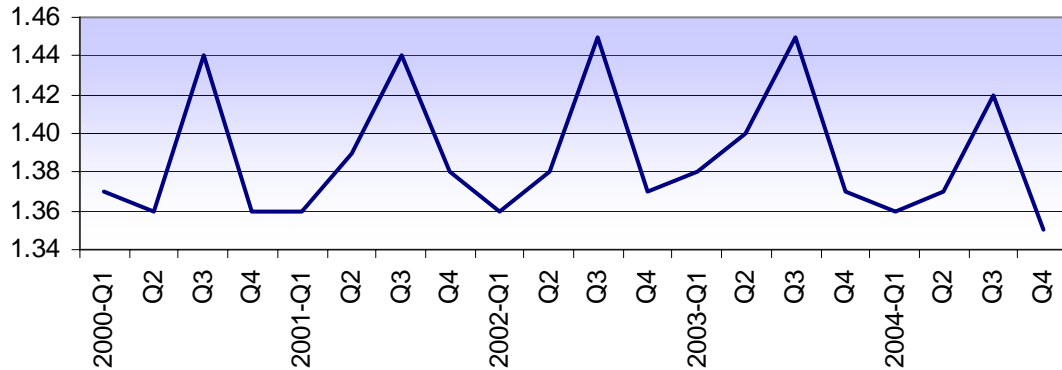
- During this time period, average quarterly wages increased by \$1,838.
- When holding wages constant in 2000 dollars, average quarterly earnings increased by 4.9% between 2000 and 2004.
- Each year during Q3, wages peak. As the “contracted jobs”, which are less than 12 month positions and are typically lower paying, are temporarily suspended, the average wage increases.
- The red line demonstrates how wages would have moved based on quarterly changes in the inflation rate benchmarked to 2000 Q1. Seasonality is factored out of the analysis to demonstrate an overall trend in wages. Actual wages showed were consistently higher than inflationary wages.

Estimated Cluster Payroll (2000-Q1 to 2004-Q4)



- Payroll is a direct function of employment and wage changes. Overall, the estimated payroll in the Education cluster increased by \$104.1 million in nominal dollars during the time period of 2000 Q1 and 2004 Q4.
- Steady employment increases and increasing wages resulted in a 11.5% increase in payroll, when analyzed in 2000 constant dollars, during the same time period.

State Location Quotient (2000-Q1 to 2004-Q4)

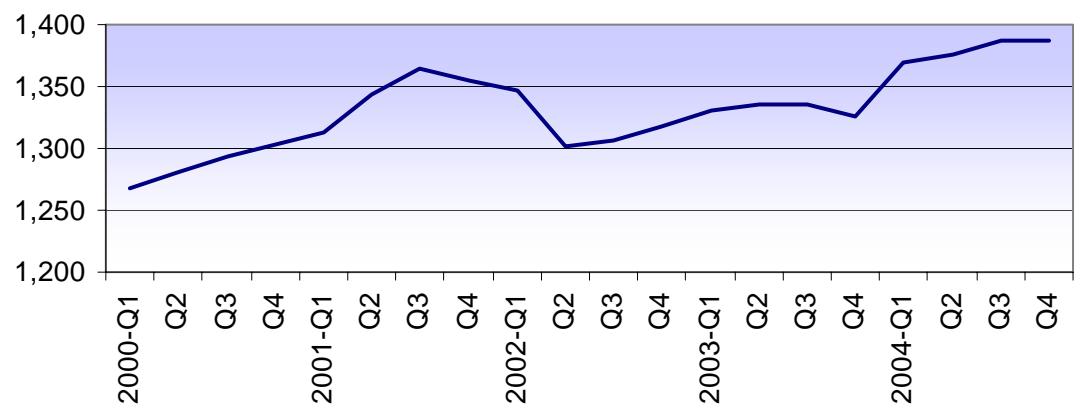


- Location Quotient (LQ) is a statistical measure that compares the concentration of employment in a local industry cluster to the concentration of employment in the same cluster statewide or nationally. An LQ of greater than 1.0 suggests that a locale has a competitive advantage within a cluster and is producing goods or services in excess of the local consumption, thus resulting in exportation of goods or services. An LQ of less than one suggests that an industry is falling behind local demand and is importing the good or service.
- Over the five-year period, the state LQ decreased by 0.5%.
- The cluster LQ was consistently above 1.3 during the time period; however, it has demonstrated overall stability with no major increasing or decreasing trend.
- Because employment within educational services is often a function of the resident population, it is important to note that the Central Region's concentration of jobs is 30% higher than that of the state.
- There appears to be a peak in state LQ during Q3 of each year, which is directly related to the staffing pattern of the region's cluster composition.



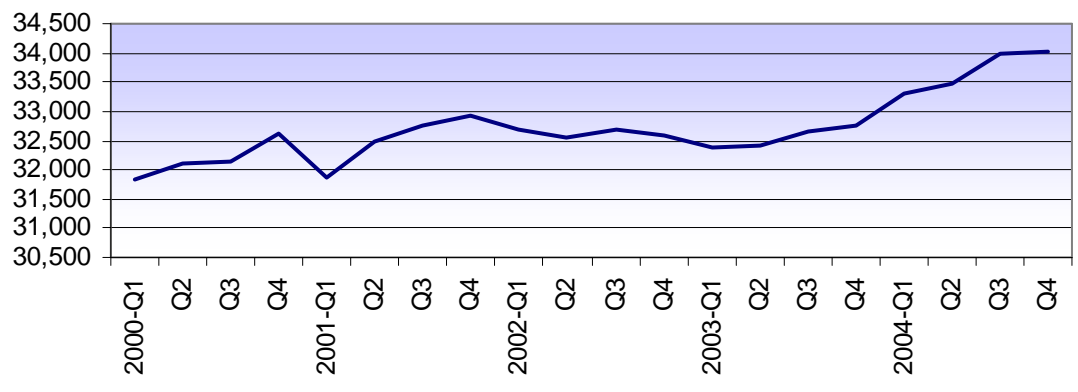
Healthcare

Employer Units (2000-Q1 to 2004-Q4)



- The total number of employer units in the Healthcare cluster increased by 119 between 2000 Q1 and 2004 Q4. There does not seem to be any seasonality that solely affects the presence of healthcare employers.
- Despite a decline between 2001 and 2002, there appears to be an overall increasing trend in employer units.
- The ratio of new jobs to the number of new employers is 18.5.

Employment (2000-Q1 to 2004-Q4)

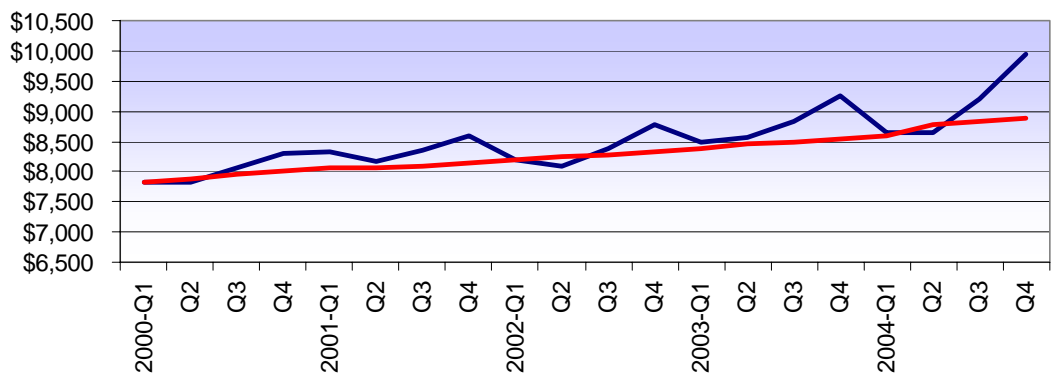


- Overall employment in the Healthcare industry increased absolutely by 2,200 jobs during the time period, but when averaged over the 5 year period, the total increase was 1,511. In 2004, employment increased by 4%.
- While there is no distinct seasonal pattern to employment, employment does appear to increase during Q4 of each year.



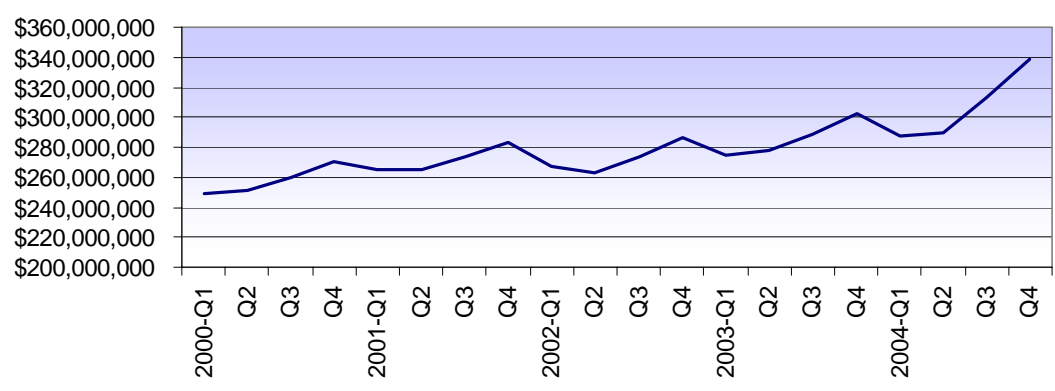
Healthcare

Quarterly Wages (2000-Q1 to 2004-Q4)



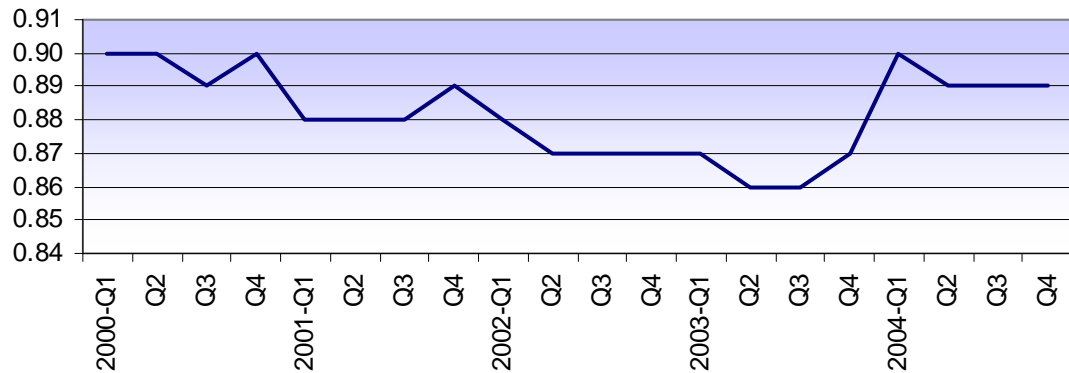
- During this time period, average quarterly wages increased by \$2,104.
- When holding wages constant in 2000 dollars, average quarterly earnings increased by 3.4% between 2000 and 2004.
- Wages peak during Q4 of each year, which corresponds with increases in employment during the same quarter.
- The red line demonstrates how wages would have moved based on quarterly changes in the inflation rate benchmarked to 2000 Q1. Seasonality is factored out of the analysis to demonstrate an overall trend in wages. Actual wages showed were only slightly higher than inflationary wages.

Estimated Cluster Payroll (2000-Q1 to 2004-Q4)



- Payroll is a direct function of employment and wage changes.
- Overall, the estimated payroll in the Healthcare cluster increased by \$88.8 million in nominal dollars during the time period of 2000 Q1 and 2004 Q4.
- Payroll mimics employment and wages with peaks during Q4 of each year.
- Growing employment and steady wages resulted in an 8.4% increase in payroll, when analyzed in 2000 constant dollars during the same time period.

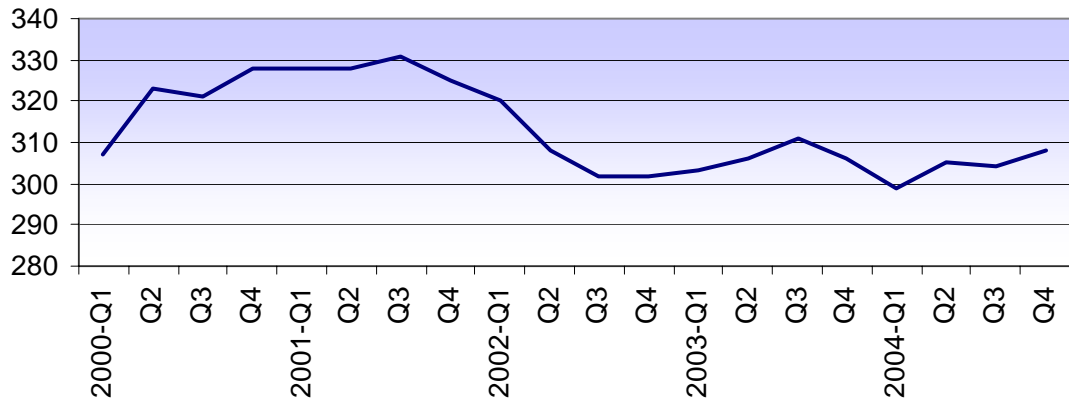
State Location Quotient (2000-Q1 to 2004-Q4)



- Location Quotient (LQ) is a statistical measure that compares the concentration of employment in a local industry cluster to the concentration of employment in the same cluster statewide or nationally. An LQ of greater than 1.0 suggests that a locale has a competitive advantage within a cluster and is producing goods or services in excess of the local consumption, thus resulting in exportation of goods or services. An LQ of less than one suggests that an industry is falling behind local demand and is importing the good or service.
- Over the five-year period, the state LQ decreased by 0.24%.
- The cluster LQ remained below 1.0, or less than the statewide average concentration of jobs, throughout the time period.
- In 2002 Q3, the cluster LQ dropped to a level not seen during the time period, but demonstrated a rebound in 2004 Q1.

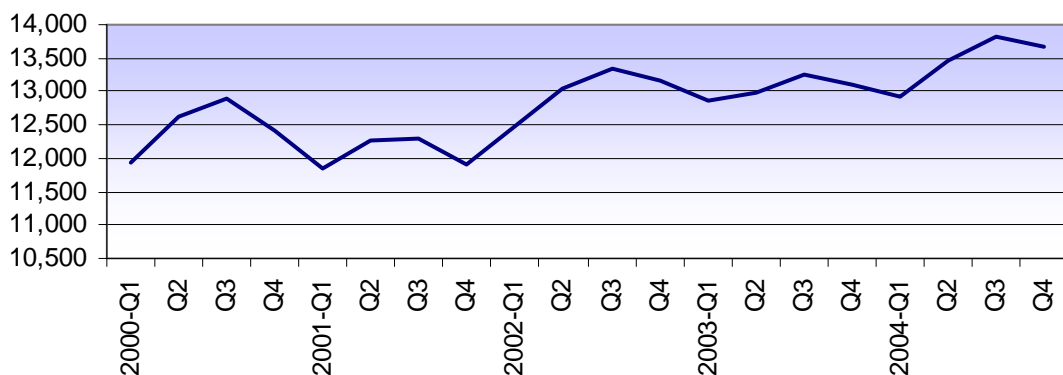
Lumber & Wood Products

Employer Units (2000-Q1 to 2004-Q4)



- The total number of employer units in the Lumber and Wood cluster returned to 2000 levels at the end of 2004 after peaking in 2001 Q3.
- The distribution of employer units does not appear to be solely affected by seasonality.

Employment (2000-Q1 to 2004-Q4)

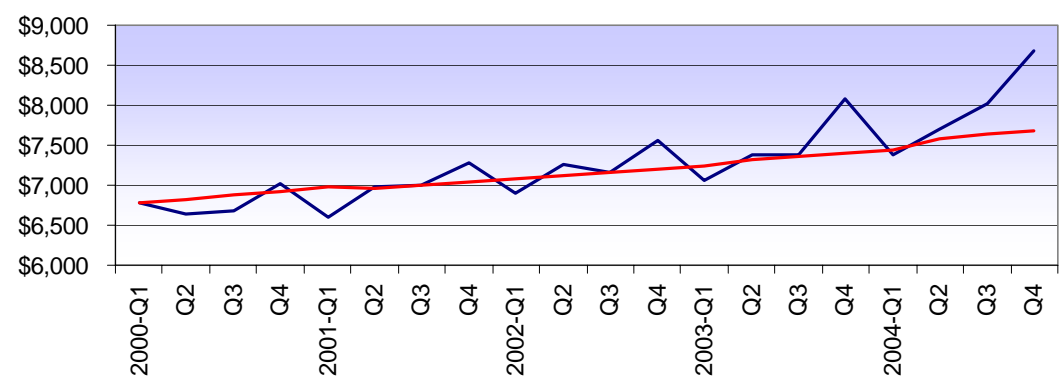


- Overall employment in the Lumber and Wood cluster increased absolutely by 1,729 jobs during the time period, but when averaged over the 5 year period, the actual increase was 989 jobs.
- The cluster demonstrated a steady increasing trend in employment.
- Employment within the cluster appears to have a seasonal trend, with peaks occurring in Q3 of each year. The lowest employment volumes are found in Q1 of each year.



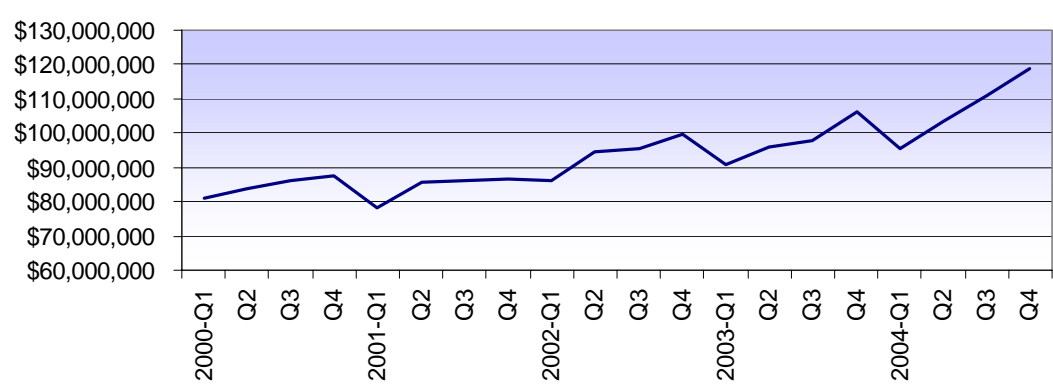
Lumber & Wood Products

Quarterly Wages (2000-Q1 to 2004-Q4)



- During this time period, average quarterly wages increased by \$1,911.
- When holding wages constant in 2000 dollars, average quarterly wages increased by 6.6% between 2000 and 2004.
- Wages peak during Q4 of each year, which may result from the temporarily lay-off of lower-paid laborer positions and/or the results of calendar year-end pay raises.
- The red line demonstrates how wages would have moved based on quarterly changes in the inflation rate benchmarked to 2000 Q1. Seasonality is factored out of the analysis to demonstrate an overall trend in wages. Actual wages, on average, were only slightly above inflationary trends.

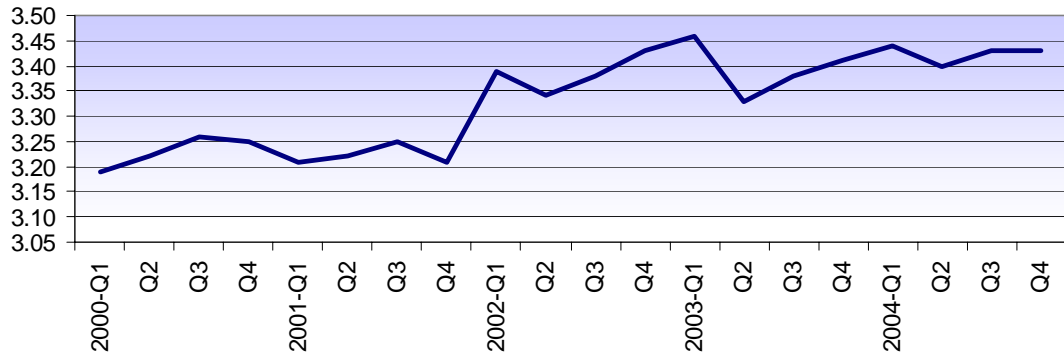
Estimated Cluster Payroll (2000-Q1 to 2004-Q4)



- Payroll is a direct function of employment and wage changes.
- Overall, the estimated payroll in the Lumber and Wood cluster increased by \$37.8 million in nominal dollars during the time period of 2000 Q1 and 2004 Q4.
- Slight increases in employment and steady wages resulted in a 15.3% increase in payroll, when analyzed in 2000 constant dollars, during the same time period.

Lumber & Wood Products

State Location Quotient (2000-Q1 to 2004-Q4)



- Location Quotient (LQ) is a statistical measure that compares the concentration of employment in a local industry cluster to the concentration of employment in the same cluster statewide or nationally. An LQ of greater than 1.0 suggests that a locale has a competitive advantage within a cluster and is producing goods or services in excess of the local consumption, thus resulting in exportation of goods or services. An LQ of less than one suggests that an industry is falling behind local demand and is importing the good or service.
- During the five-year time period, the state LQ increased by 6.1%.
- The cluster LQ has remained above 3.0, or 3 times the statewide concentration of jobs in the cluster.