The views expressed here are those of the presenter and do not necessarily represent the views of the Federal Reserve Bank of New York or the Federal Reserve System.

Changes in the Workforce of Upstate New York
State of Upstate New York Conference, Syracuse, NY

June 9, 2011
Outline

• Show changes in upstate’s industry structure over past three decades

• Examine changes in the types of jobs upstate workers perform

• Highlight the importance of colleges and universities in building human capital for the region
Little Long-Term Employment Growth in Upstate New York

Index of Total Annual Employment

Source: U.S. Bureau of Economic Analysis and Moody's Economy.com
Employment Growth Within Upstate
1980-2009

Source: U.S. Bureau of Economic Analysis and Moody's Economy.com
Employment Trends: Industry Structure

• The Export Economy: economic drivers that bring in revenue from outside the region
  ▪ Goods Production and Distribution
  ▪ Producer Services
  ▪ Consumer Services

• The Local Sector: goods and services for local consumption
  ▪ Local Goods
  ▪ Public Administration
Growth in Service Industry Offsetting Decline in Goods


Source: U.S. Bureau of the Census and Author’s Calculations
Net Change in Jobs by Decade for Upstate New York
By Industry Group

Source: U.S. Bureau of the Census and Author's Calculations
Upstate Economy is Becoming More Stable

Employment Trends over Past Three Cycles

Source: U.S. Bureau of Labor Statistics and Moody's Economy.com
Employment Trends: Occupation Structure

• Industry structure reveals information what an economy produces

• Occupation structure gives information about the type of work that people do

• Within an industry, occupations change considerably over time
  ▪ For example, the manufacturing industry has fewer line workers and more managers than in the past
Skill Classes by Occupation Group
Based on Median Wage in the U.S.

Legal
Computer/Math
Engineers/Architects
Management

High

Social Scientists
Scientists
Finance
Business Operation
Health Practitioners

Mid-High

Installation & Repair
Protective Services
Teachers & Librarians
Arts & Entertainment
Construction
Precision Production
Community Services

Mid

Administrative
Machine Operators
Sales
Transportation

Mid-Low

Bldg Maintenance
Health Support
Farming
Personal Care
Food Prep

Low

Source: U.S. Bureau of the Census and Author’s Calculations
Net Change in Jobs by Skill Group for Upstate New York

1980s, 1990s, and 2000s

Source: U.S. Bureau of the Census and Author’s Calculations
Distribution of Jobs by Wage Group

Upstate New York

- High Wages: 12%
- Mid-High Wages: 7%
- Mid Wages: 22%
- Mid-Low Wages: 46%
- Low Wages: 13%

1980:
- High Wages: 14%
- Mid-High Wages: 10%
- Mid Wages: 23%
- Mid-Low Wages: 36%
- Low Wages: 17%

Source: U.S. Bureau of the Census and Author’s Calculations
Median Wage by Decade and by Occupation
United States

Source: U.S. Bureau of the Census and Author's Calculations
Median Wage by Decade and by Occupation

United States

Source: U.S. Bureau of the Census and Author’s Calculations
Median Wage by Decade and by Occupation

United States

Source: U.S. Bureau of the Census and Author’s Calculations
Median Wage by Decade and by Occupation

United States

Source: U.S. Bureau of the Census and Author’s Calculations
The Importance of Human Capital

• Continuing to shift to a knowledge economy: jobs increasingly require more skills and knowledge

• Building human capital through a college degree is more important than ever before

• All workers benefit from being around others with higher human capital
Higher Levels of Human Capital Associated With Greater Wealth

Per Capita Personal Income and Population With College Degree

Note: The BEA and Census data are both for the 2007 year.

Source: U.S. Bureau of Economic Analysis, U.S. Bureau of the Census and Moody’s Economy.com
# High and Low Human Capital Occupations

## Percent With Bachelor’s in 2009

<table>
<thead>
<tr>
<th>High Human Capital Occupations</th>
<th>Low Human Capital Occupations</th>
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</thead>
<tbody>
<tr>
<td>Social Scientists</td>
<td>Sales</td>
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<tr>
<td>Scientists</td>
<td>Protective Services</td>
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<tr>
<td>Legal</td>
<td>Administrative</td>
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<tr>
<td>Teachers &amp; Librarians</td>
<td>Personal Care</td>
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<td>Health Practitioners</td>
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<td>Management</td>
<td>Machine Operators</td>
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<td></td>
<td>Building Maintenance</td>
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</tbody>
</table>

91% for Social Scientists, 84% for Scientists, 77% for Legal, 77% for Teachers & Librarians, 72% for Finance, 66% for Community Services, 65% for Computer/Math, 63% for Engineers/Architects, 57% for Arts & Entertainment, 56% for Health Practitioners, 56% for Business Operation, 55% for Management, 26% for Sales, 21% for Protective Services, 18% for Administrative, 13% for Personal Care, 11% for Precision Production, 9% for Farming, 8% for Health Support, 7% for Food Prep, 7% for Installation & Repair, 6% for Transportation, 6% for Construction, 6% for Machine Operators, 5% for Building Maintenance.

Source: U.S. Bureau of the Census and Author’s Calculations
Share of Jobs in High Human Capital Occupations

United States and Upstate New York

Source: U.S. Bureau of the Census and Author’s Calculations
How to Increase a Region’s Human Capital? Higher Education Industry Can Help

1. **Producing local graduates:** increasing the *supply* of human capital
   - Educates the local population
   - Draws students into the region, some of whom may stay after graduation
     - Limited ability to keep local graduates not tied to the region

2. **Conducting research:** raising the *demand* for human capital
   - Skills, knowledge, and technology developed at academic institutions
     used by local firms, increasing high human capital economic activities
     - Benefits for local businesses tied to the region
Conclusions

• The upstate economy’s industry mix has become more diversified, and as a result, more stable.

• There has been a shift toward higher skilled and higher human capital jobs.

• The higher education industry has a key role to play in raising skills of local workers, and in helping local businesses raise the demand for human capital.