

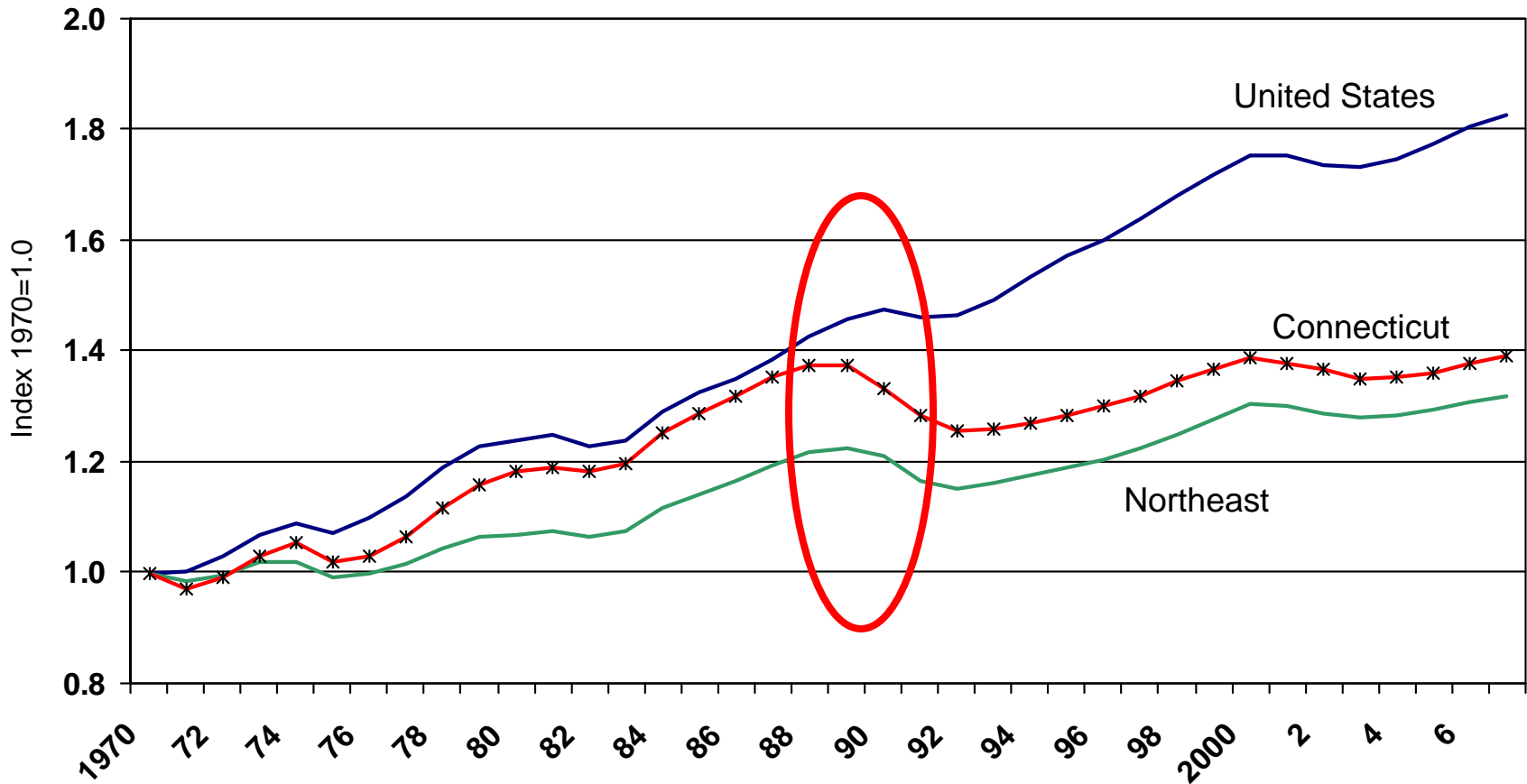
# Industry Analysis

- **Changing Industry Composition**
- **Diversity (more or less diverse?)**
- **Convergence with U.S. (mix/diversity)**
- **Economic Base & legacy industries**
- **Tech & Innovation**
- **Northeast regional trends**
- **CT regions –contribution to growth**
- **Productivity**
- **Public vs private job growth**
- **Growth prospects...current & emerging strengths**

# Connecticut's Industry Structure

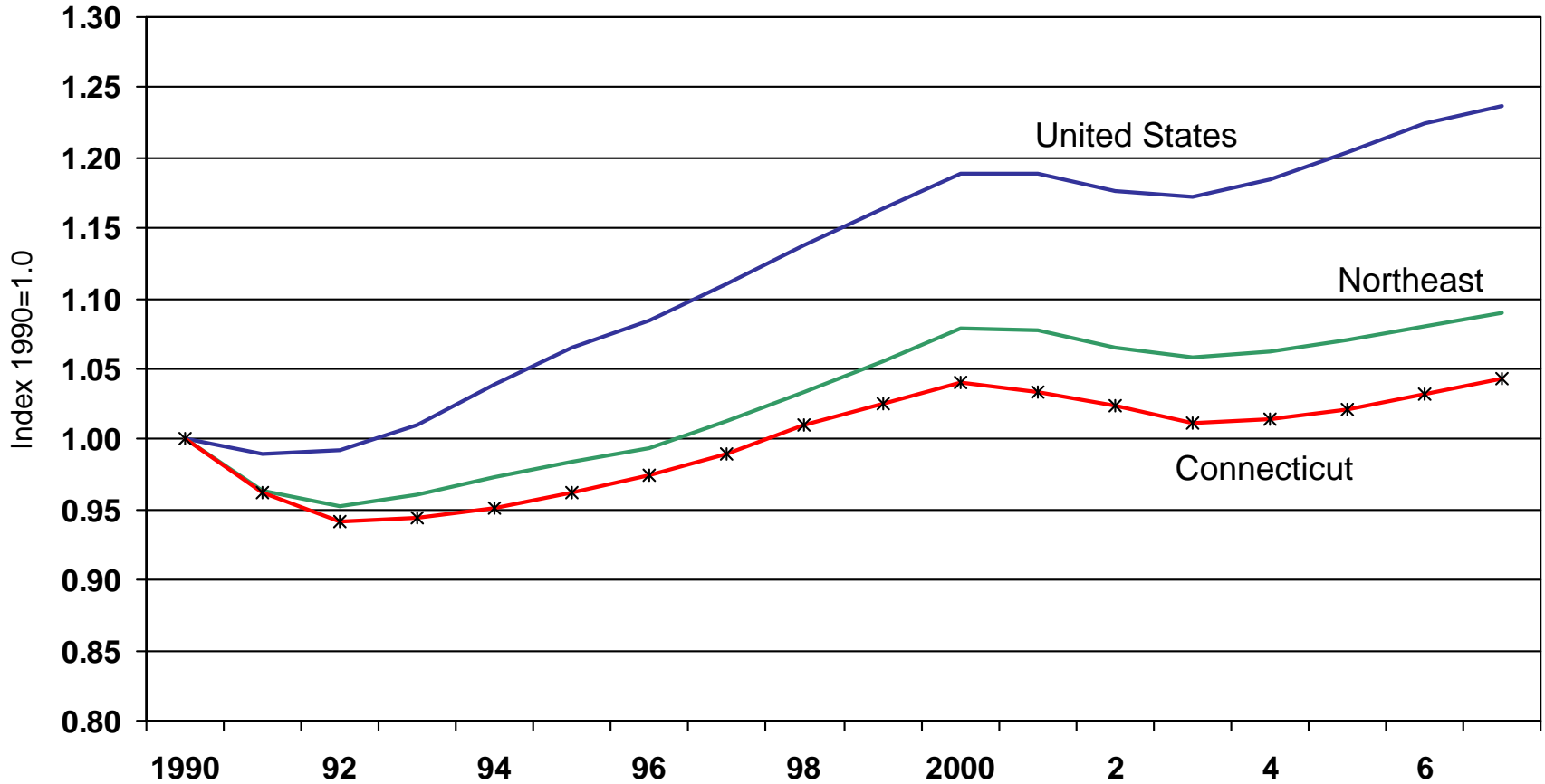
- Employment trends in Connecticut, Northeast, U.S.
- Employment shifts by industry
- Effect of shifts in industry employment on employee earnings

# Index of employment growth 1970-2007



Source: :Moody's Economy.com

# Index of employment growth 1990-2007

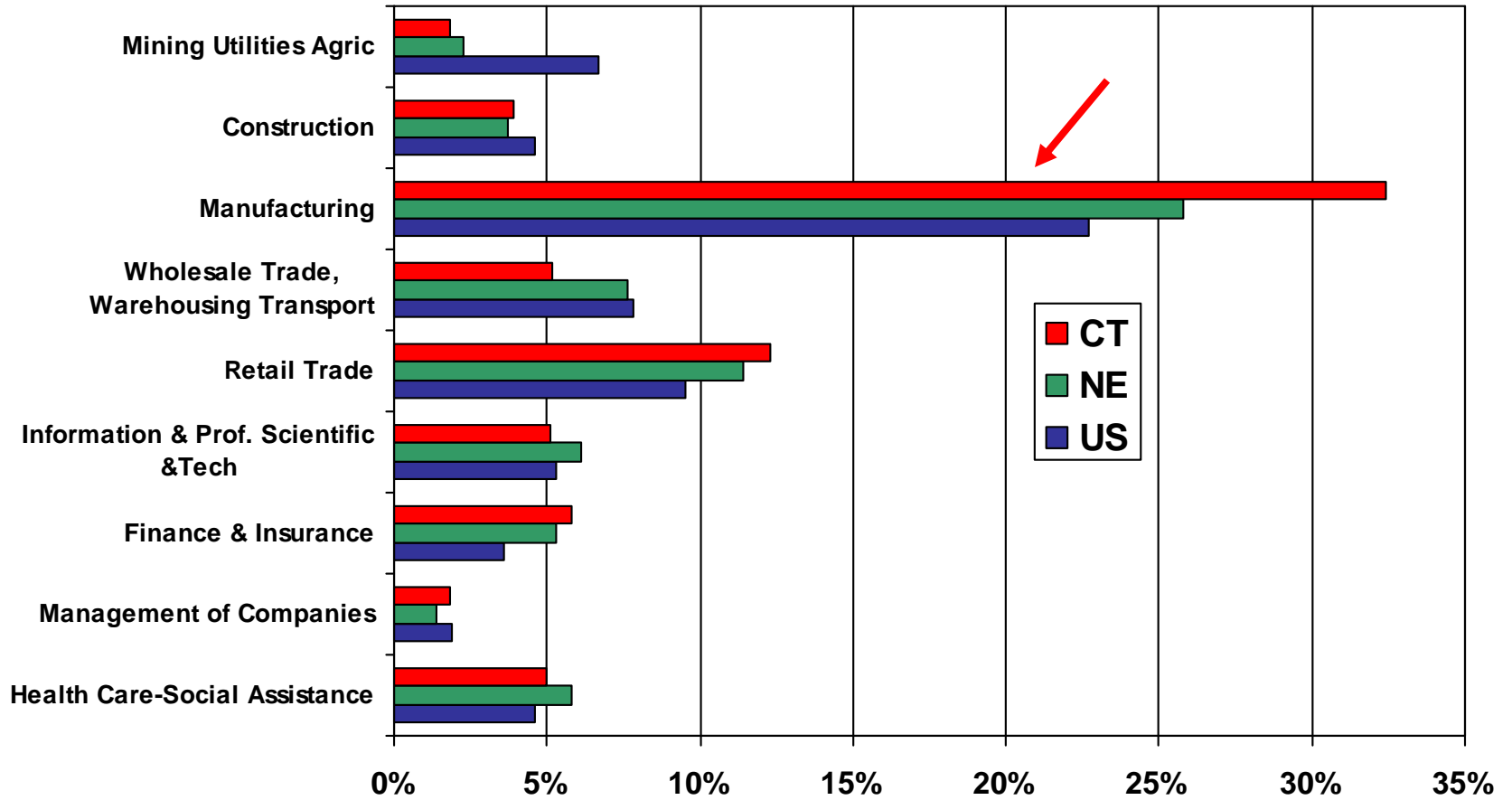


Source: :Moody's Economy.com

# Industry Shifts

- Geographies
  - Connecticut
  - Northeast
    - Maine, New Hampshire, Vermont, Connecticut, Rhode Island, Massachusetts, New York, New Jersey and Pennsylvania
  - U.S.
- Industry economic base analysis

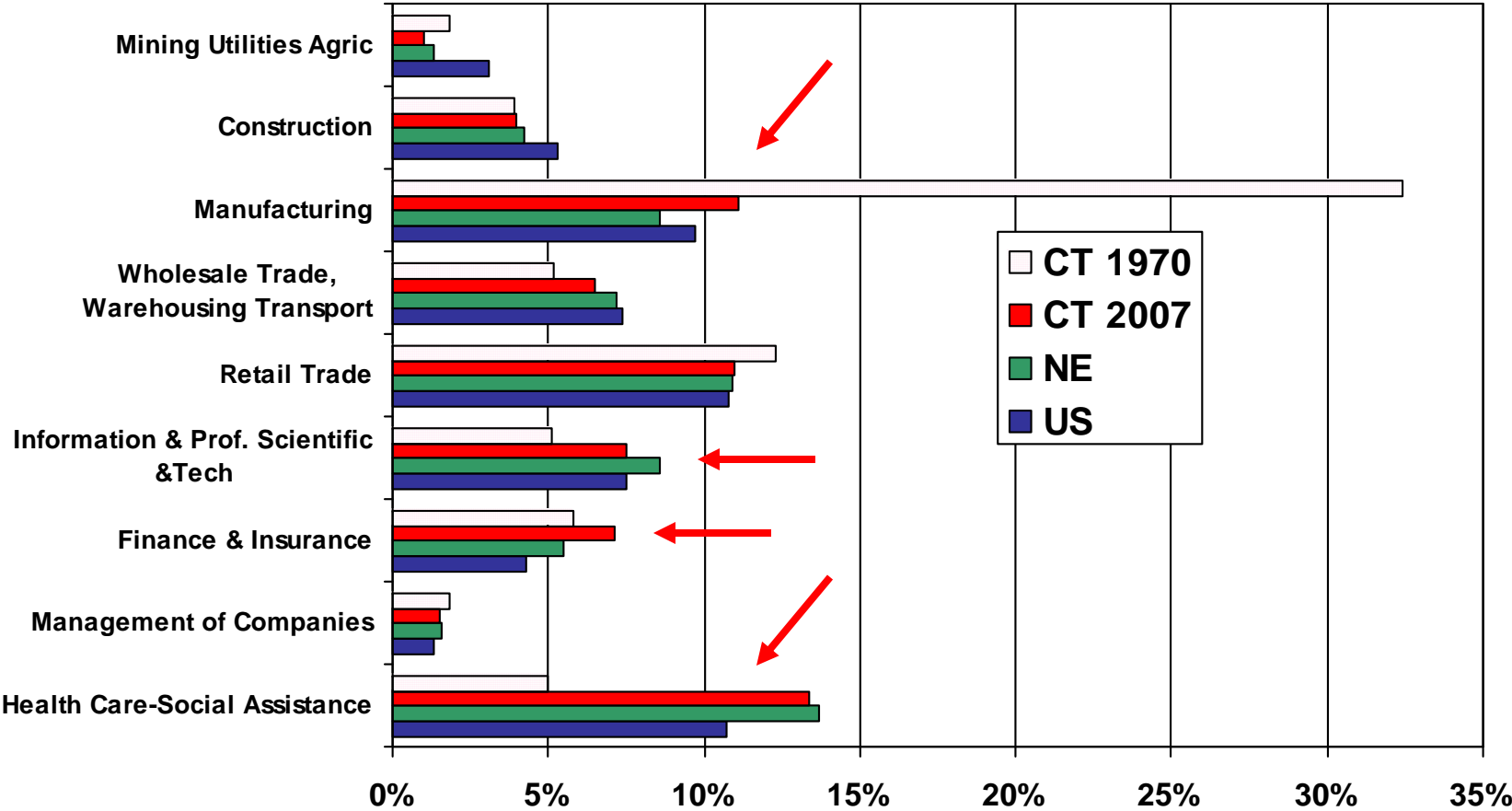
# 1970 - Employment Industry Structure



Source: :Moody's Economy.com

(selected industries)

# 2007 - Employment industry structure



Source: :Moody's Economy.com

(selected industries)

# Industry economic base analysis

Connecticut Industry Concentration Coefficients for Employment (LQ of at least 1.25 and Emp >500)

NAICS Code	Industry Name	1970	1980	1990	2000	2007
221	Utilities	1.03	0.96	1.04	1.25	1.20
323	Printing & Related Support Activities	1.95	1.91	1.18	1.05	1.00
325	Chemical Manufacturing	0.96	1.10	1.25	1.60	1.47
<b>332</b>	<b>Fabricated Metal Product Manufacturing</b>	<b>2.37</b>	<b>2.34</b>	<b>1.88</b>	<b>1.80</b>	<b>1.73</b>
333	Machinery Manufacturing	1.81	1.63	1.29	1.27	1.24
334	Computer & Electronic Product Manufacturing	1.28	1.32	1.08	0.96	0.90
<b>335</b>	<b>Electrical Equipment, Appliance, &amp; Component Manufacturing</b>	<b>2.13</b>	<b>2.08</b>	<b>1.72</b>	<b>1.69</b>	<b>2.12</b>
<b>336</b>	<b>Transportation Equipment Manufacturing</b>	<b>3.32</b>	<b>2.81</b>	<b>2.61</b>	<b>1.78</b>	<b>2.06</b>
339	Miscellaneous Manufacturing	1.89	1.84	1.36	1.44	1.51
<b>425</b>	<b>Wholesale Electronic Markets &amp; Agents &amp; Brokers</b>	<b>2.10</b>	<b>2.30</b>	<b>2.62</b>	<b>1.34</b>	<b>1.38</b>
454	Nonstore Retailers	2.70	1.90	1.65	1.73	1.76
483	Water Transportation	0.27	0.47	0.71	1.72	1.31
<b>485</b>	<b>Transit &amp; Ground Passenger Transportation</b>	<b>1.90</b>	<b>2.01</b>	<b>2.04</b>	<b>2.36</b>	<b>2.32</b>
515	Broadcasting (except Internet)	0.48	0.55	0.76	0.96	1.29
518	Internet Service Providers, Web Search Portals, & Data Processing Service	3.14	2.20	1.42	1.41	0.91
519	Other Information Services	1.60	1.46	1.52	0.75	1.78
<b>523</b>	<b>Securities, Commodity Contracts, &amp; Other Financial Instruments</b>	<b>0.71</b>	<b>0.77</b>	<b>1.08</b>	<b>1.55</b>	<b>2.11</b>
<b>524</b>	<b>Insurance Carriers &amp; Related Activities</b>	<b>2.20</b>	<b>2.41</b>	<b>2.78</b>	<b>2.34</b>	<b>2.29</b>
<b>525</b>	<b>Funds, Trusts, &amp; Other Financial Vehicles</b>	<b>0.55</b>	<b>0.62</b>	<b>0.63</b>	<b>5.55</b>	<b>4.41</b>
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	1.27	1.09	0.88	1.81	1.98
551	Management of Companies & Enterprises	0.91	1.06	1.06	1.29	1.11
562	Waste Management & Remediation Services	0.37	0.72	1.31	1.45	1.44
611	Educational Services	1.69	1.60	1.54	1.31	1.51
622	Hospitals	1.01	1.27	0.98	1.01	1.04
623	Nursing & Residential Care Facilities	1.21	1.34	1.46	1.64	1.62
624	Social Assistance	0.88	0.99	1.17	1.29	1.36
712	Museums, Historical Sites, & Similar Institutions	0.92	1.44	1.56	1.47	1.35

Source: :Moody's Economy.com

(LQ >= 1.25 and Employment >500 & selection)

# Employment in economic base industries

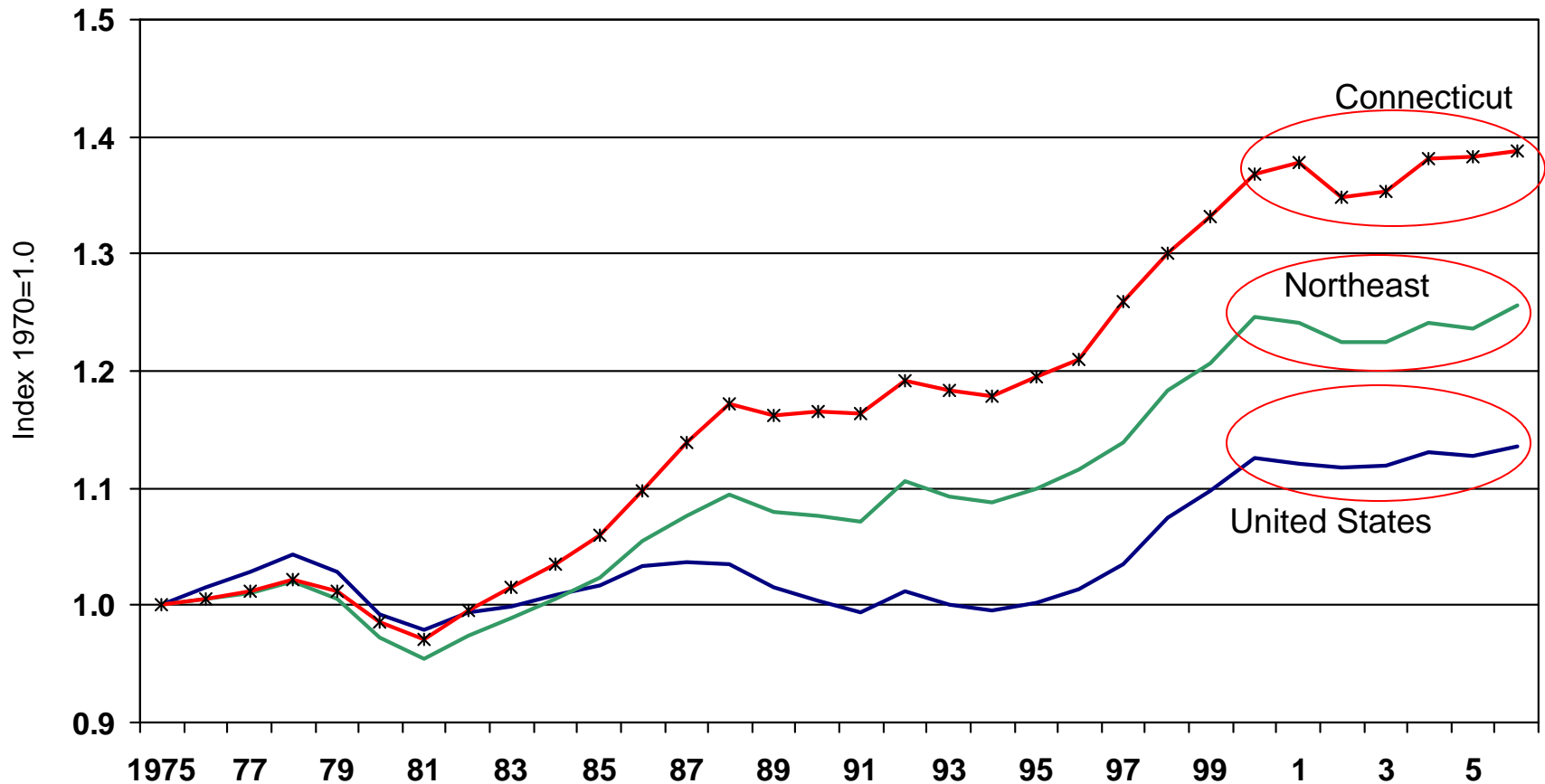
Employment in Economic Base Industries (Thousands)

NAICS Code	Industry Name	1970	1980	1990	2000	2007	
221	Utilities	9.3	9.9	11.4	9.7	8.2	
323	Printing & Related Support Activities	20.4	20.0	14.1	10.9	7.7	
325	Chemical Manufacturing	17.3	18.6	19.2	20.2	15.7	
326	Plastics & Rubber Products Manufacturing	13.6	13.4	9.8	8.8	7.2	
<b>332</b>	<b>Fabricated Metal Product Manufacturing</b>	<b>63.3</b>	<b>65.9</b>	<b>44.8</b>	<b>40.5</b>	<b>33.3</b>	
333	Machinery Manufacturing	42.0	41.5	27.0	23.7	18.2	
334	Computer & Electronic Product Manufacturing	38.6	42.9	30.3	22.6	14.1	
<b>335</b>	<b>Electrical Equipment, Appliance, &amp; Component Manufacturing</b>	<b>23.4</b>	<b>22.9</b>	<b>16.1</b>	<b>12.9</b>	<b>11.2</b>	
<b>336</b>	<b>Transportation Equipment Manufacturing</b>	<b>103.7</b>	<b>95.6</b>	<b>82.9</b>	<b>46.9</b>	<b>43.6</b>	
339	Miscellaneous Manufacturing	20.8	21.0	13.8	13.5	11.9	
<b>425</b>	<b>Wholesale Electronic Markets &amp; Agents &amp; Brokers</b>	<b>11.9</b>	<b>16.4</b>	<b>20.7</b>	<b>10.6</b>	<b>14.1</b>	
454	Nonstore Retailers	8.4	9.3	10.2	11.0	9.5	
483	Water Transportation	0.3	0.5	0.6	1.2	1.0	
<b>485</b>	<b>Transit &amp; Ground Passenger Transportation</b>	<b>7.6</b>	<b>7.0</b>	<b>8.3</b>	<b>11.3</b>	<b>11.7</b>	
515	Broadcasting (except Internet)	2.2	2.6	3.2	4.2	5.2	
518	Internet Service Providers, Web Search Portals, & Data Processing Service	3.1	3.7	4.4	5.7	3.0	
519	Other Information Services	0.9	1.1	1.3	1.5	2.8	
<b>523</b>	<b>Securities, Commodity Contracts, &amp; Other Financial Instruments</b>	<b>2.6</b>	<b>3.0</b>	<b>7.4</b>	<b>16.0</b>	<b>22.0</b>	
<b>524</b>	<b>Insurance Carriers &amp; Related Activities</b>	<b>44.9</b>	<b>60.4</b>	<b>82.9</b>	<b>66.8</b>	<b>65.3</b>	92,000
<b>525</b>	<b>Funds, Trusts, &amp; Other Financial Vehicles</b>	<b>0.3</b>	<b>0.4</b>	<b>0.5</b>	<b>5.8</b>	<b>4.8</b>	
533	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	0.1	0.1	0.2	0.6	0.7	
551	Management of Companies & Enterprises	22.3	26.1	26.1	29.7	25.2	
562	Waste Management & Remediation Services	1.2	2.3	4.5	5.8	6.3	
611	Educational Services	28.3	31.4	38.6	40.4	54.9	
622	Hospitals	20.8	37.2	50.7	51.5	58.0	212,600
623	Nursing & Residential Care Facilities	15.7	27.2	40.2	54.6	59.0	
624	Social Assistance	5.7	10.4	18.9	30.8	40.8	
712	Museums, Historical Sites, & Similar Institutions	0.5	1.0	1.6	2.1	2.2	
	<b>Total Base Industry Employment</b>	<b>529.4</b>	<b>591.6</b>	<b>589.6</b>	<b>559.2</b>	<b>557.4</b>	33%

Source: :Moody's Economy.com

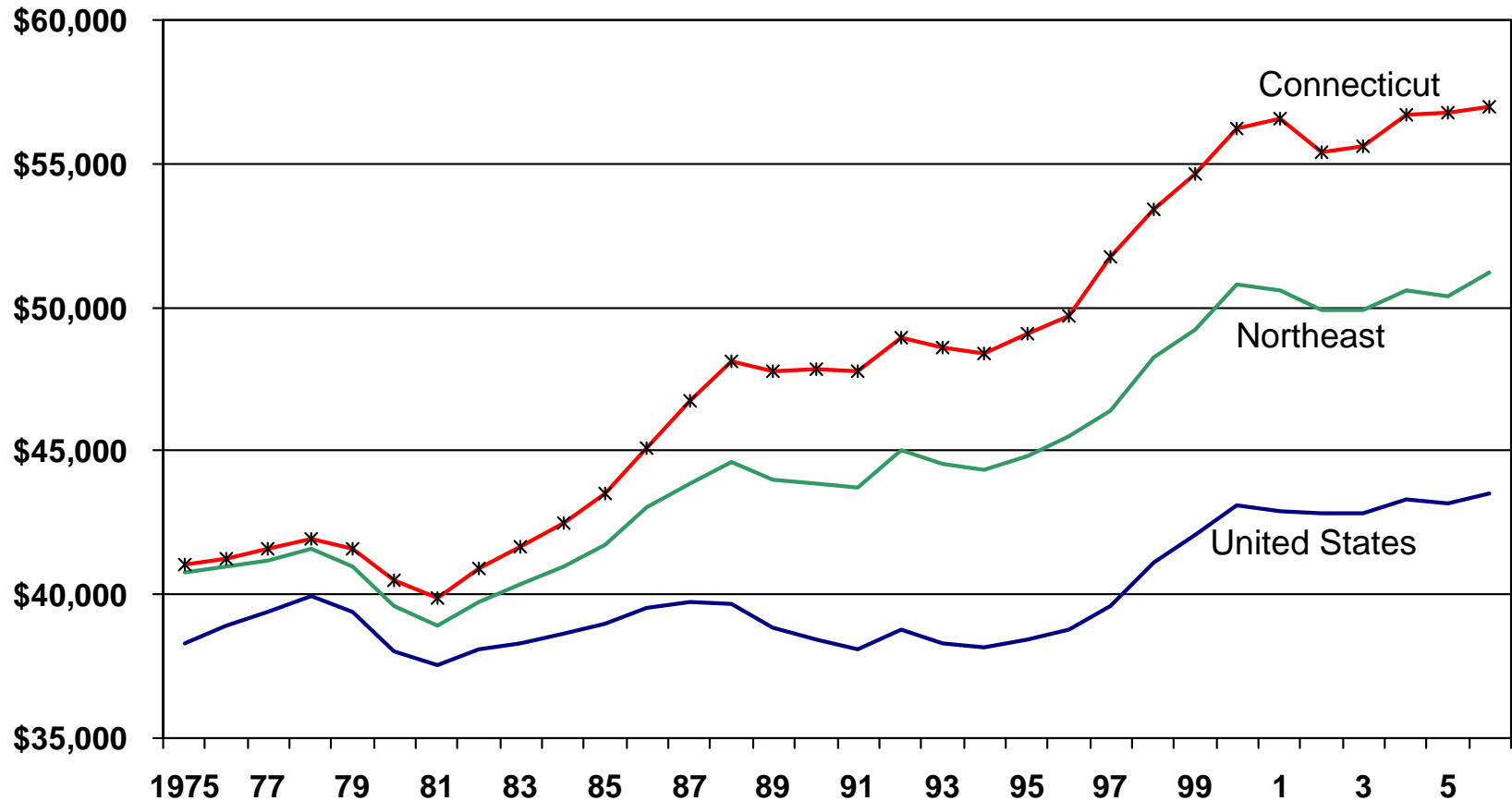
(LQ >= 1.25 and Employment >500 & selection)

# Index of Real Wages per Employee, 1975-2006



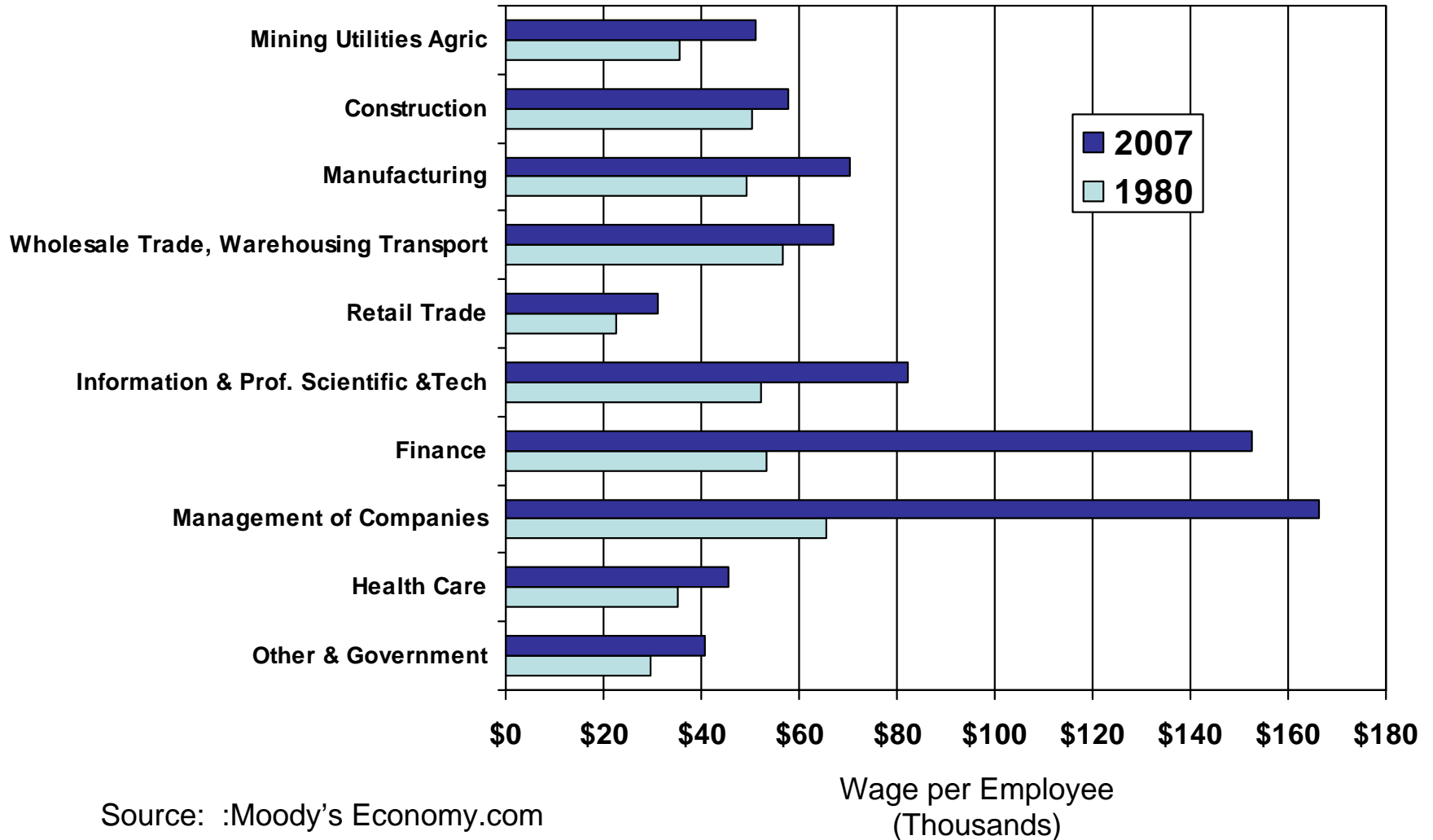
Source: :Moody's Economy.com

# Real (\$2007) Wages per Employee 1975-2006



Source: :Moody's Economy.com

# Real (2007\$) Wages per Employee in Connecticut



Source: :Moody's Economy.com

# Jobs, Jobs, Jobs

- Since 1970, employment in Connecticut has lagged the U.S. and the Northeast since 1990.
  - 212,000 (50%) of the manufacturing jobs have left since 1970. (Avg. wage 2007-\$70,198.)
  - Why is Connecticut no longer competitive as a manufacturing location? Could it be or even should it be? (Shift in population from Northeast?)
  - Health care jobs have grown by 171,000. (Avg Wage 2007-\$45,000.)



- Connecticut's average wage is 12 % higher than the northeast and 33% higher than the U.S.
  - High wages are good for Connecticut today. They indicate a current competitive advantage.
  - High wages indicate high labor costs which discourage business investment.
  - High wages also contribute to high costs of living. State's relatively higher housing prices also contribute to low business investment.
  - High wages may create complacency and inaction.
  - Current investment in public projects that would encourage future private growth in the state may be marginalized.
  - Future investments by the state are at risk due to further erosion of revenue streams to the state.

# High-Tech in Connecticut and the Northeast

## Industry Convergence

# CERC's NAICS industry definition of technology is based on the 1999 SIC definition from the U.S. Bureau of Labor Statistics. (Part 1 of 2)

3251	Basic Chemical Mfg
3252	Resin, Synthetic Rubber & Synthetic Fibers Mfg
3253	Pesticide, Fertilizer & Other Agr Chemical Mfg
3254	Pharmaceutical & Medicine Mfg
3255	Paint, Coating & Adhesive Mfg
3259	Other Chemical Product & Preparation Mfg
3333	Commercial & Service Industry Machinery Mfg
3336	Engine, Turbine & Power Transmission Equip Mfg
3339	Other General Purpose Machinery Mfg
3341	Computer & Peripheral Equipment Mfg
3342	Communications Equipment Mfg

3343	Audio & Video Equipment Mfg
3344	Semiconductor & Other Electronic Component Mfg
3345	Navigational, Measuring, Electromed & Instruments Mfg
3346	Mfg & Reproducing Magnetic & Optical Media
3353	Electrical Equipment Mfg
3359	Other Electrical Equipment & Component Mfg
3364	Aerospace Product & Parts Mfg
3369	Other Transportation Equipment Mfg
3391	Medical Equipment & Supplies Mfg
5112	Software Publishers
5121	Motion Picture & Video Industries

# CERC's NAICS industry definition of technology is based on the 1999 SIC definition from the U.S. Bureau of Labor Statistics.

## (Part 2 of 2)

5122	Sound Recording Industries
5151	Radio & Television Broadcasting
5152	Cable & Other Subscription Programming
5161	Internet Publishing & Broadcasting
5171	Wired Telecommunications Carriers
5172	Wireless Telecom Carriers (exc Satellite)
5173	Telecommunications Resellers
5174	Satellite Telecommunications
5175	Cable & Other Program Distribution
5179	Other Telecommunications
5181	Internet Service Providers & Web Search Portals

5182	Data Processing, Hosting & Related Svcs
5191	Other Information Svcs
5232	Securities & Commodity Exchanges
5324	Commercial & Industrial Machinery & Equip Rental
5413	Architectural, Engineering & Related Svcs
5415	Computer Systems Design & Related Svcs
5416	Mgmt, Scientific & Technical Consulting Svcs
5417	Scientific Research & Development Svcs
5419	Other Professional, Scientific & Technical Svcs
8112	Electronic & Precision Equip Repair & Maintenance

# Technology and Non-Technology Employment

Employment (1000s)	Connecticut		Northeast		U.S.	
	1990	2007	1990	2007	1990	2007
Total - Technology Industries	210.9	184.1	2,288.8	2,206.7	9,597.8	11,274.0
Total - Non-Technology Industries	1,408.8	1,514.0	21,092.8	23,433.2	99,891.6	126,695.8
Total - Nonfarm	1,619.7	1,698.1	23,381.6	25,639.9	109,489.4	137,969.8

Employment Change	Connecticut 90-07		Northeast 90-07		U.S. 90-07	
	# (1000s)	%	# (1000s)	%	# (1000s)	%
Total - Technology Industries	-26.8	-13%	-82.1	-4%	1,676.2	17%
Total - Non-Technology Industries	105.2	7%	2,340.4	11%	26,804.2	27%
Total - Nonfarm	78.4	5%	2,258.3	10%	28,480.4	26%

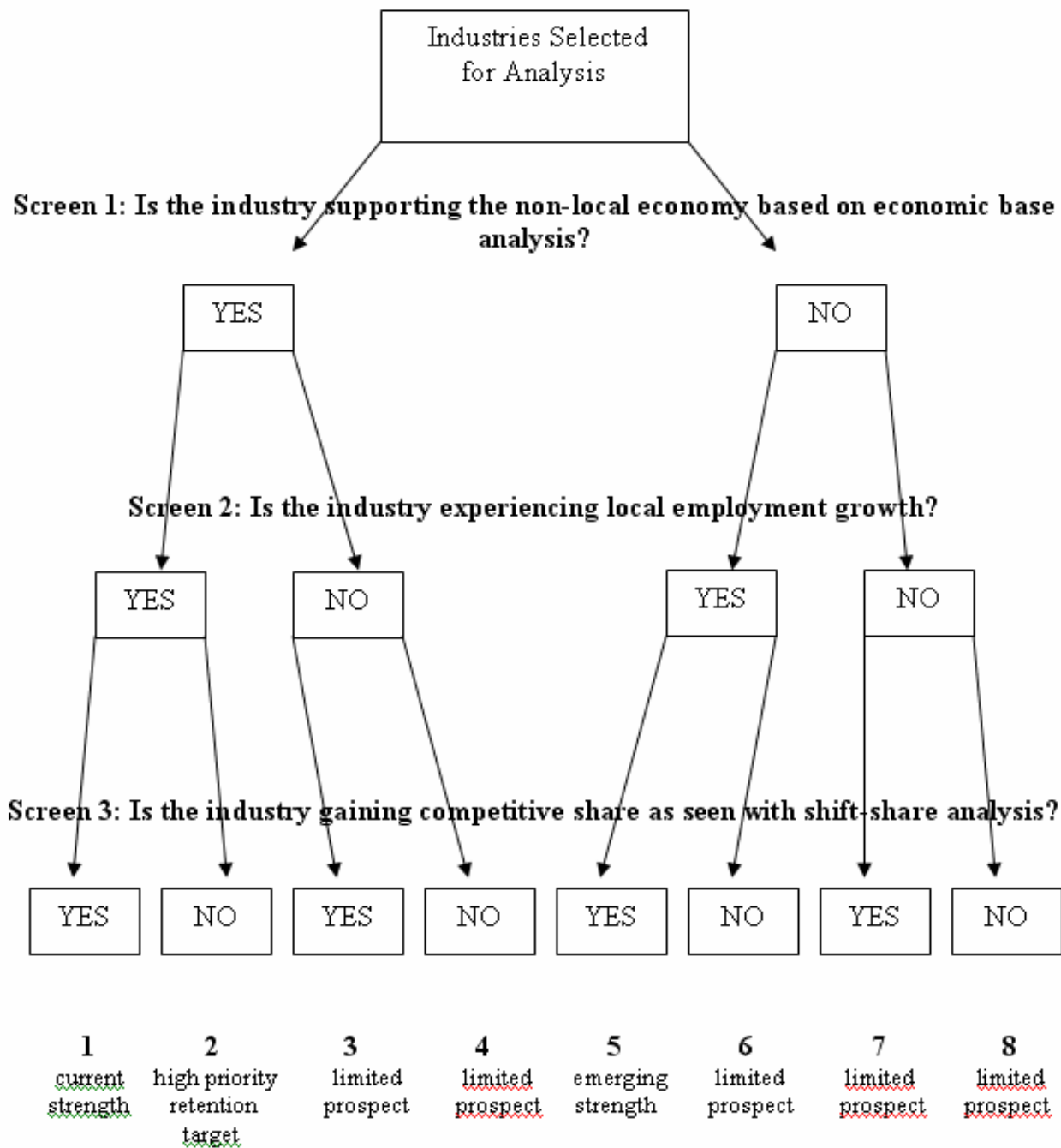
Source: Moody's Economy.com; Calculations by CERC

# Technology and Non-Technology Real GDP

Real GDP (\$Mil, 2000)	Connecticut		Northeast		U.S.	
	1990	2007	1990	2007	1990	2007
Total - Technology Industries	17,292	32,779	188,320	387,438	727,901	1,835,633
Total - Non-Technology Industries	108,348	147,400	1,413,031	1,995,689	6,384,623	9,713,020
Total	125,639	180,180	1,601,352	2,383,128	7,112,525	11,548,653

Real GDP Change	Connecticut 90-07		Northeast 90-07		U.S. 90-07	
	# (\$Mil)	%	# (\$Mil)	%	# (\$Mil)	%
Total - Technology Industries	15,487	90%	199,118	106%	1,107,732	152%
Total - Non-Technology Industries	39,052	36%	582,658	41%	3,328,397	52%
Total	54,541	43%	781,776	49%	4,436,128	62%

Source: Moody's Economy.com; Calculations by CERC



# Current Technology Strengths in Connecticut

		Connecticut		Northeast	
		Emp	GDP	Emp	GDP
5232	Securities & Commodity Exchanges	current	current	current	current
5152	Cable & Other Subscription Programming	current	current	priority	current
5419	Other Professional, Scientific & Technical Services	current	current		emerging
8112	Electronic & Precision Equip Repair & Maintenance	current	current		emerging
3336	Engine, Turbine & Power Transmission Equip Mfg	current	current		
3391	Medical Equipment & Supplies Mfg	current			
3254	Pharmaceutical & Medicine Mfg	priority	current	priority	priority

Source: Moody's Economy.com; Calculations by CERC

# Emerging Technology Strengths in Connecticut

		Connecticut		Northeast	
		Emp	GDP	Emp	GDP
5417	Scientific Research & Development Services	emerging	emerging	current	current
5172	Wireless Telecommunications Carriers	emerging	emerging		
3369	Other Transportation Equipment Mfg	emerging			
5161	Internet Publishing & Broadcasting	priority	emerging	current	emerging
5181	Internet Service Providers & Web Search Portals		emerging		emerging
5182	Data Processing, Hosting & Related Services		emerging		emerging
5324	Commercial & Industrial Machinery & Equip Rental		emerging		emerging
3252	Resin, Synthetic Rubber & Artificial Fibers Mfg		emerging		
3253	Pesticide, Fertilizer & Other Ag Chemical Mfg		emerging		
3255	Paint, Coating & Adhesive Mfg		emerging		
3259	Other Chemical Product & Preparation Mfg		emerging		

Source: Moody's Economy.com; Calculations by CERC

# Priority Retention Technology Targets in Connecticut

		Connecticut		Northeast	
		Emp	GDP	Emp	GDP
5175	Cable & Other Program Distribution	priority	priority	priority	priority
5415	Computer Systems Design & Related Services	priority	priority		priority
3359	Other Electrical Equipment & Component Mfg		priority		priority

Source: Moody's Economy.com; Calculations by CERC

# Additional Strengths in the Northeast

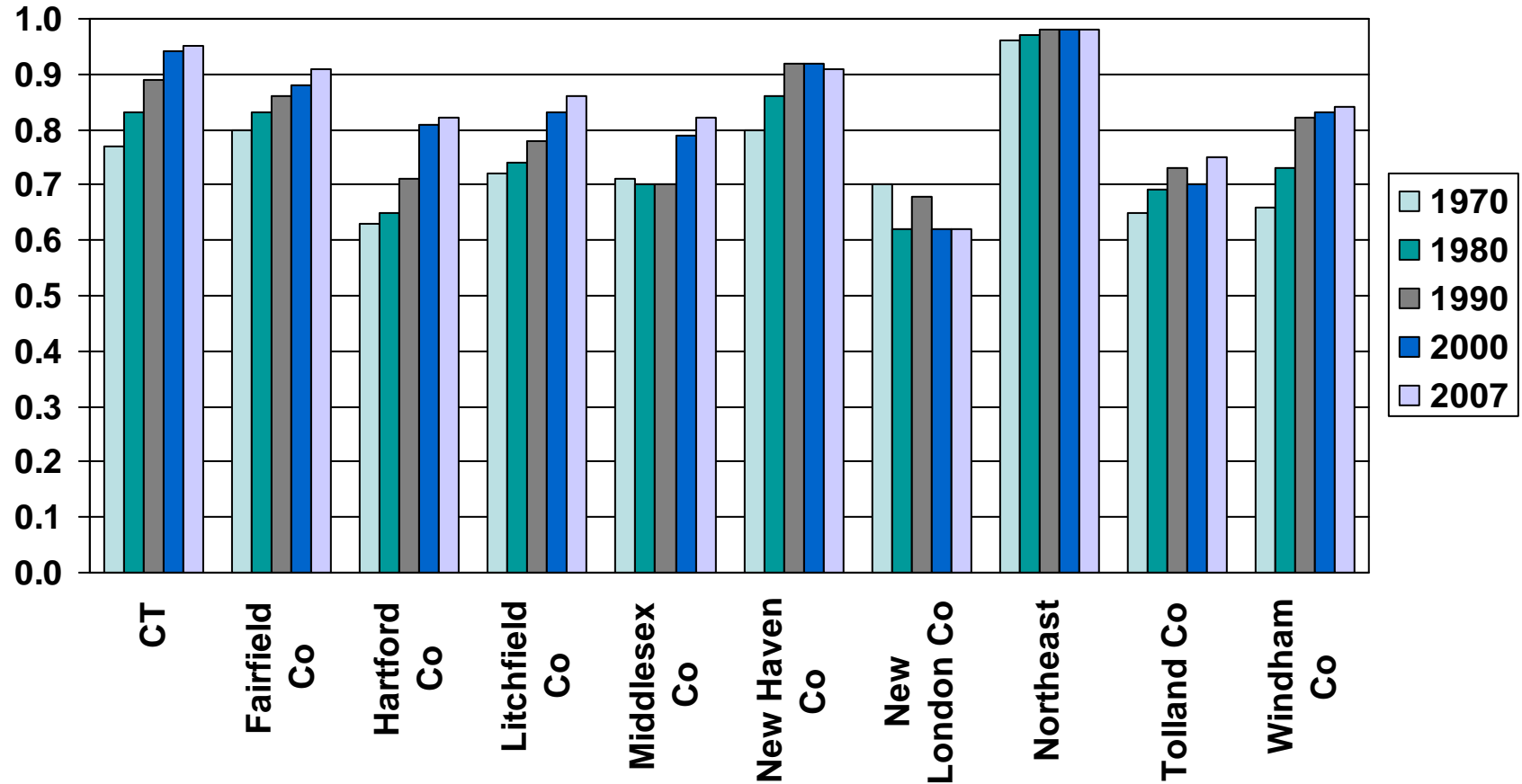
		Connecticut		Northeast	
		Emp	GDP	Emp	GDP
5173	Telecommunications Resellers			emerging	emerging
5174	Satellite Telecommunications			emerging	emerging
5191	Other Information Services			priority	current
5121	Motion Picture & Video Industries				emerging
5122	Sound Recording Industries				current
5151	Radio & Television Broadcasting				priority
5171	Wired Telecommunications Carriers				priority

Source: Moody's Economy.com; Calculations by CERC

# Industry Correlations

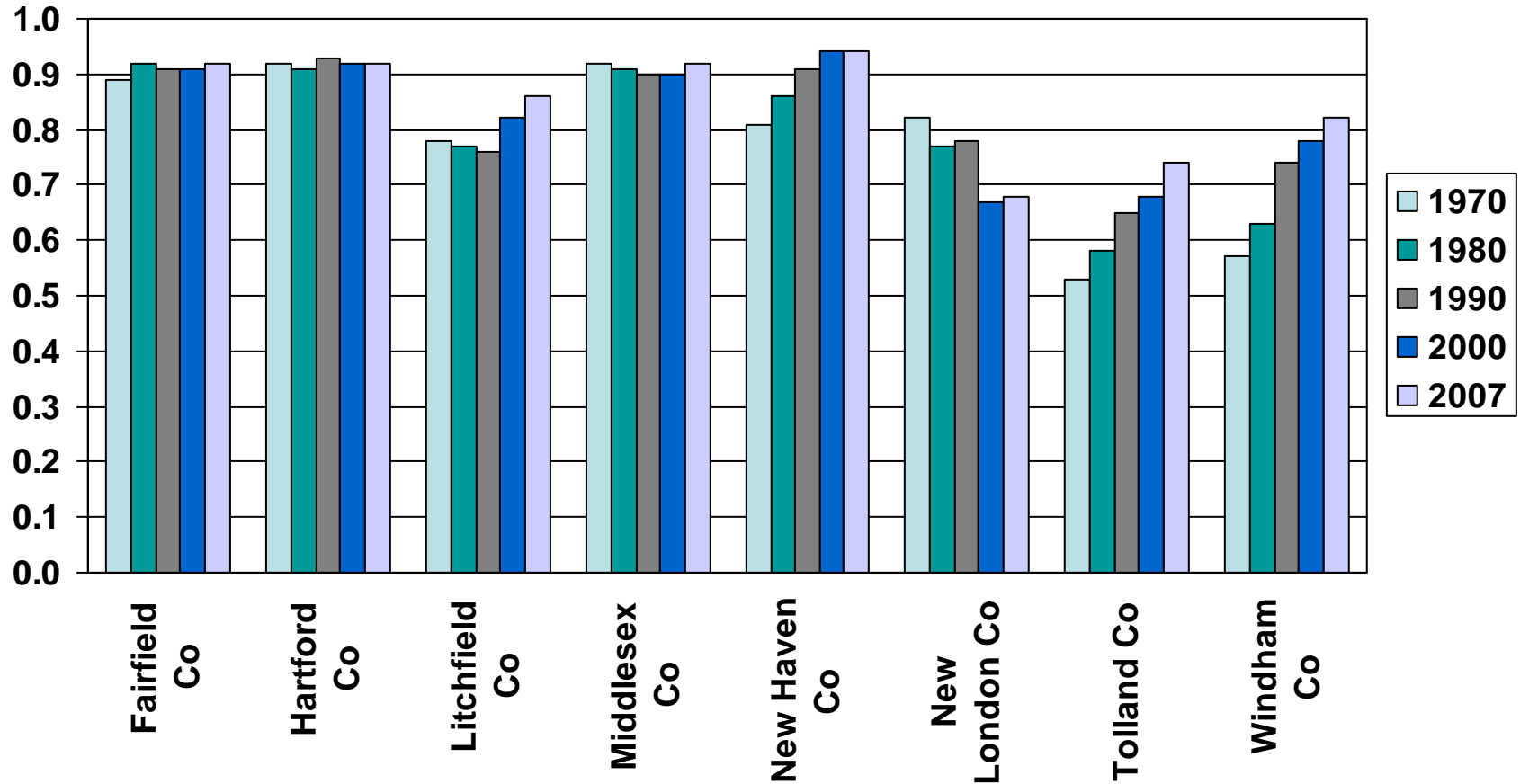
- How similar are regions' industry structures in terms of employment?
  - Includes all 3-digit NAICS industries
  - Calculate each industry's share of total employment
  - Derive correlations between regions based on the series of employment shares

# Correlations with U.S. Industry Structure



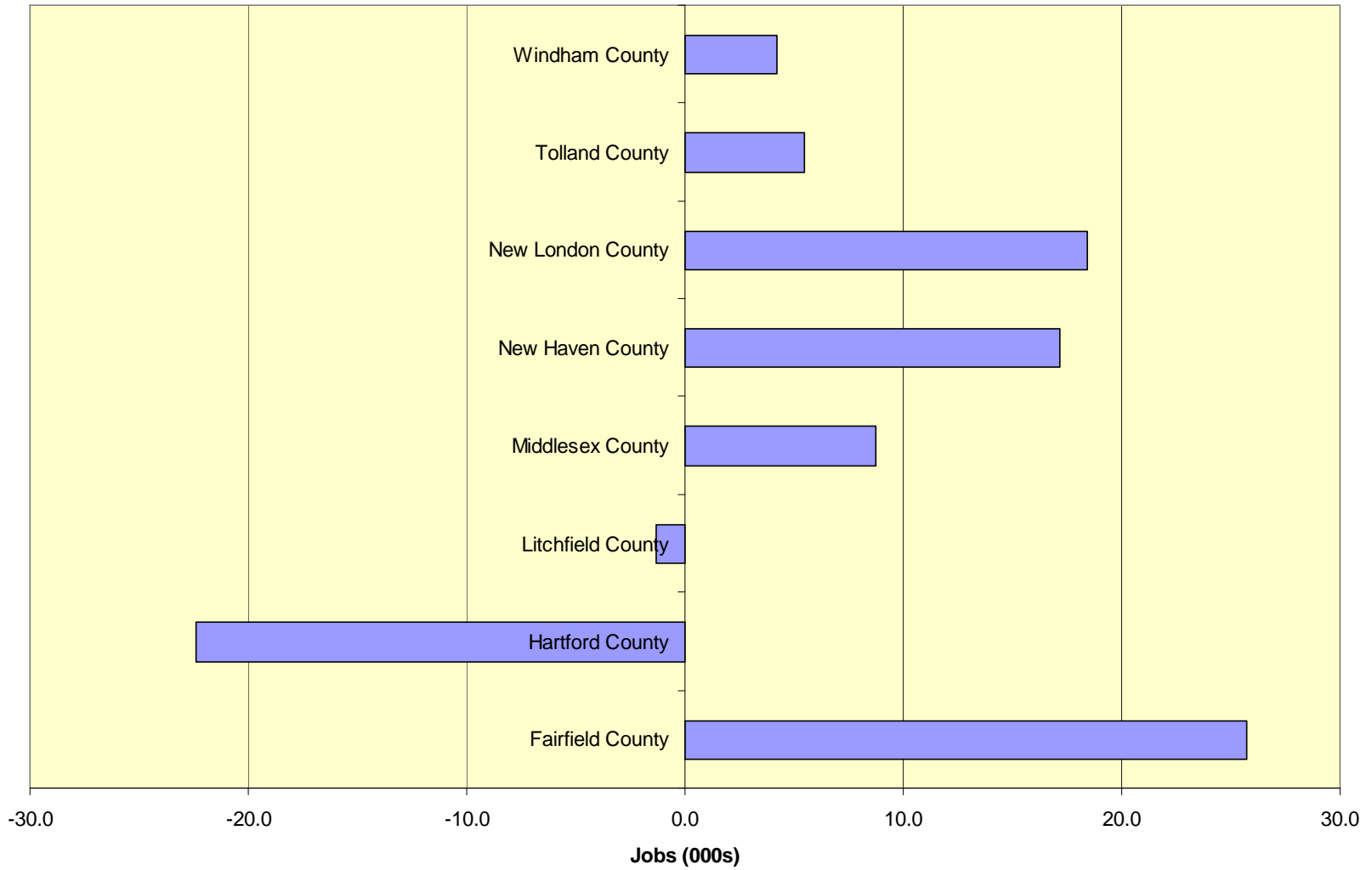
Source: Moody's Economy.com

# County Correlations with CT Industry Structure



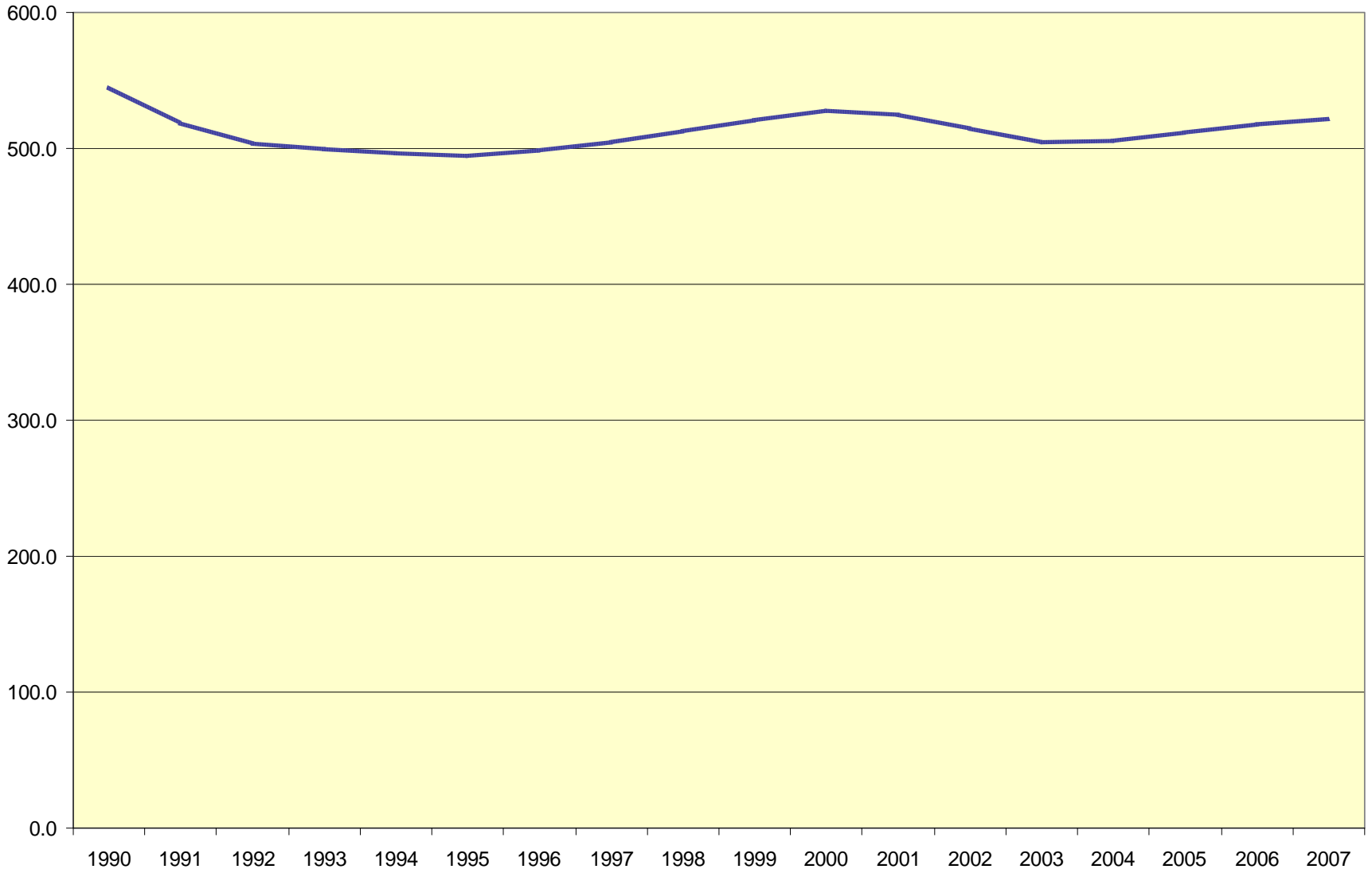
Source: Moody's Economy.com

### Employment Shift by County: 1990-2007



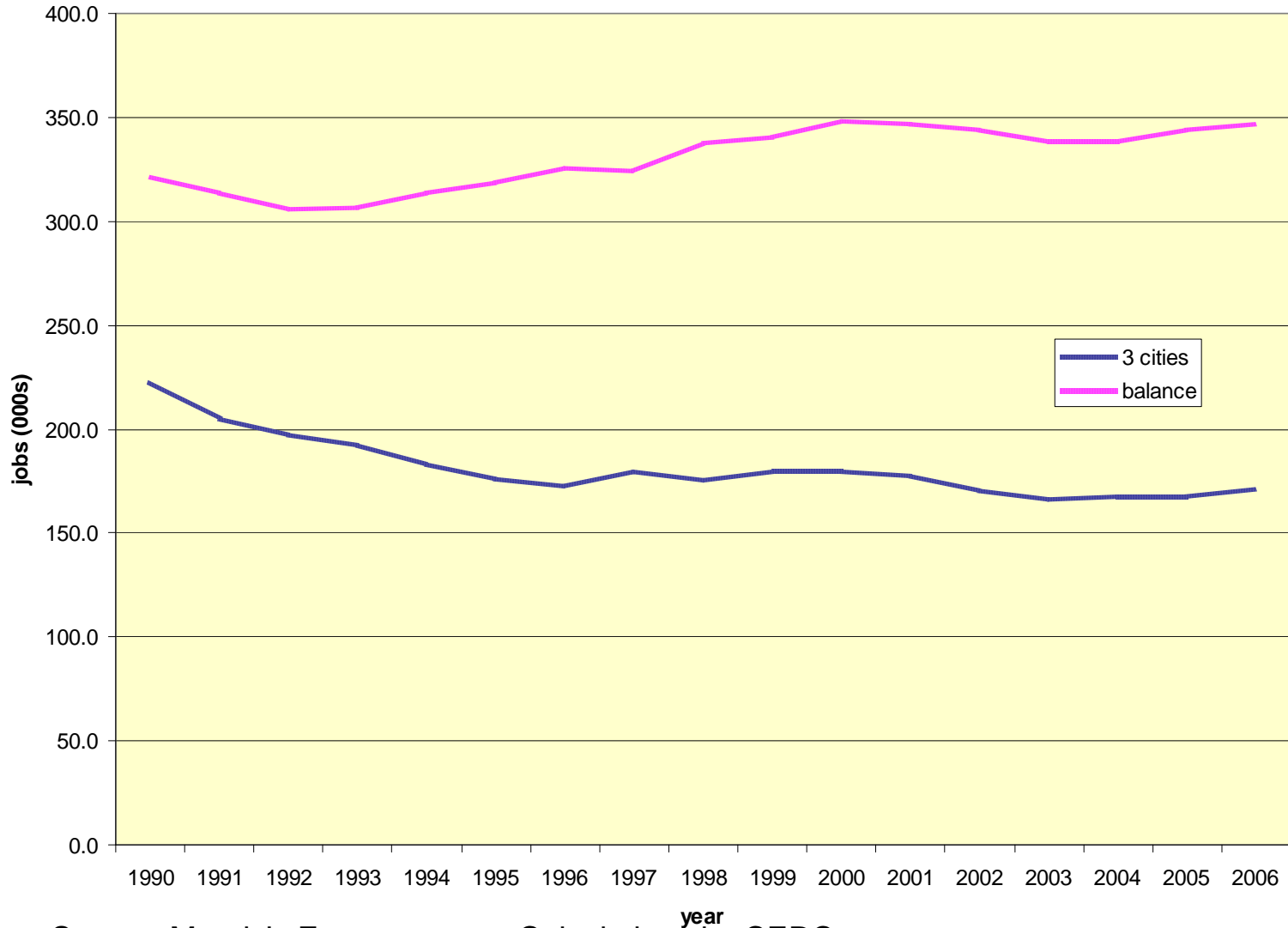
Source: Moody's Economy.com; Calculations by CERC

### Hartford County Employment



Source: Moody's Economy.com; Calculations by CERC

### Employment trends: 3 cities and rest of county



Source: Moody's Economy.com; Calculations by CERC

<b>Connecticut: Total Payroll Employment (including non-BLS sectors)</b>	<b>Change 90-07</b>
Employment: Local Government, (Ths., SA)	43.523
Employment: Ambulatory Health Care Services, (Ths., SA)	25.594
Employment: Administrative and Support Services, (Ths., SA)	20.106
Employment: Food Services and Drinking Places, (Ths., SA)	18.93
Employment: Social Assistance, (Ths., SA)	18.907
Employment: Nursing and Residential Care Facilities, (Ths., SA)	18.304
Employment: Educational Services, (Ths., SA)	15.522
Employment: Professional, Scientific, and Technical Services, (Ths., SA)	14.458
Employment: Securities, Commodity Contracts, and Other Financial Investments and Related Activities, (Ths., SA)	13.072
Employment: Hospitals, (Ths., SA)	6.642
<b>top 10 total</b>	<b>195.058</b>

Source: Moody's Economy.com

<b>Connecticut: Total Payroll Employment (including non-BLS sectors)</b>	<b>Change 90-07</b>
Employment: Electrical Equipment, Appliance, and Component Manufacturing, (Ths., SA)	-5.638
Employment: Printing and Related Support Activities, (Ths., SA)	-5.999
Employment: Wholesale Electronic Markets and Agents and Brokers, (Ths., SA)	-6.375
Employment: Machinery Manufacturing, (Ths., SA)	-6.389
Employment: Federal Government, (Ths., SA)	-6.604
Employment: Credit Intermediation and Related Activities, (Ths., SA)	-9.564
Employment: Fabricated Metal Product Manufacturing, (Ths., SA)	-11.463
Employment: Computer and Electronic Product Manufacturing, (Ths., SA)	-15.683
Employment: Insurance Carriers and Related Activities, (Ths., SA)	-17.176
Employment: Transportation Equipment Manufacturing, (Ths., SA)	-40.228
<b>bottom 10 total</b>	<b>-125.119</b>

Source: Moody's Economy.com