

Employment Growth in America: Exploring Where Good Jobs Grow

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*The views expressed herein do not necessarily represent those of the Federal Reserve Bank of St. Louis or the Federal Reserve System.

Importance of Job Growth

- Jobs provide income
- Jobs confer additional benefits:
 - Provide a sense of purpose and accomplishment
 - Maintain human capital and skills
- Economies with rising living standards experience job growth

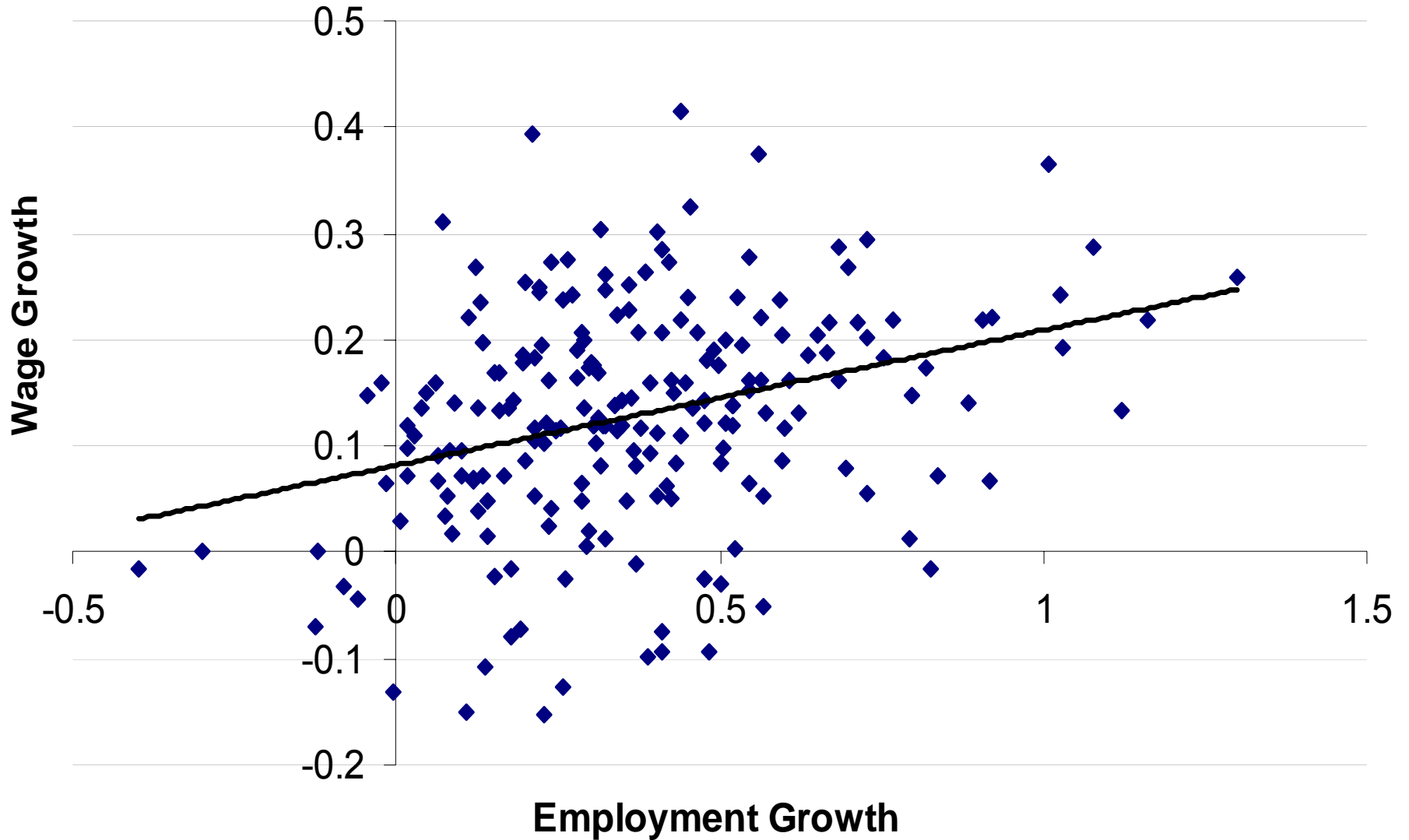
Illustration: Wages and Job Growth

- Sample of 206 U.S. metropolitan areas
- 1980 to 2000
- 10 percentage point ↑ in employment growth is associated with
 - 1.3 percentage point ↑ in the growth of average hourly wages
 - 1.6 percentage point ↑ in the growth of median hourly wages

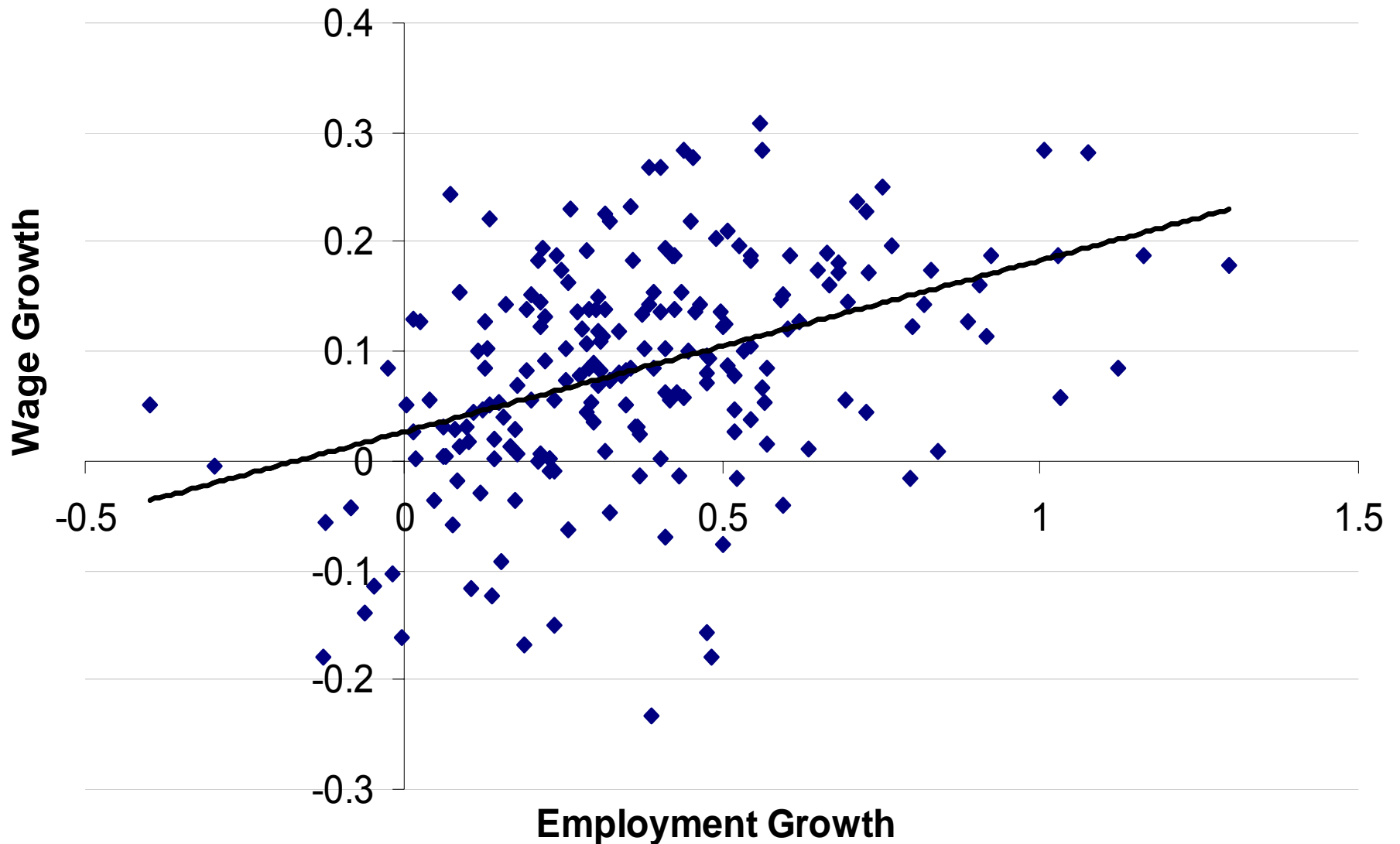
Note: Data are from the U.S. Census of Population and Housing, 1980, 2000.



Average Wage Growth and Employment Growth: 1980-2000



Median Wage Growth and Employment Growth: 1980-2000



Basic Observation

- Not all jobs are created equal
- Some pay well, offer desirable working conditions (hours, benefits, environments)
- Some pay poorly, have less desirable conditions

“Good” Jobs vs. “Bad” Jobs

- Jobs defined by industries identified in the decennial U.S. Census
- 196 industries consistently identified over the years 1980, 1990, 2000
- Definitions:
 - Good jobs: those in top 25% of average hourly pay
 - Bad jobs: those in bottom 25% of average hourly pay

Note: Excluded are jobs in public administration and most agriculture. Technically, employment is quantified by number of workers rather than number of jobs.

Examples of Good Jobs

- Security, Commodity Brokerage and Investment Companies: \$30.93 / hr
- Business Management and Consulting Services: \$27.00 / hr
- Petroleum Refining: \$25.91 / hr
- Guided Missiles, Space Vehicles and Parts: \$25.86 / hr
- Legal Services: \$24.85 / hr

Note: Average over years 1980, 1990, 2000 in year 2000 dollars

Examples of Bad Jobs

- Eating and Drinking Places: \$10.85 / hr
- Bowling Alleys, Billiard and Pool Parlors: \$11.86 / hr
- Gasoline Service Stations: \$12.00 / hr
- Hotels and Motels: \$12.18 / hr
- Nursing and Personal Care Facilities: \$12.41 / hr

Note: Average over years 1980, 1990, 2000 in year 2000 dollars.

Q: Why should we care about the types of jobs in an economy?

A: *The composition of jobs influences a number of outcomes that affect our well-being.*

Some Outcomes Associated with Good Job Growth

Among 206 metropolitan areas (1980-2000),
greater numbers of good jobs tend to be
accompanied by:

- ✓ Higher incomes
- ✓ Rising property values
- ✓ Lower crime
- ✓ Greater educational attainment among the population

Some Evidence

A 10 percentage point \uparrow in the rate of good-job growth over a decade correlates with:

- \$0.42 \uparrow in average hourly wages
- \$0.25 \uparrow in median hourly wages
- \$0.20 \uparrow in average hourly wages of bottom 25% of jobs
- \$0.24 \uparrow in average hourly wages of top 25% of jobs

Some Evidence

A 10 percentage point ↑ in the rate of good-job growth over a decade correlates with:

- \$17.31 ↑ in median monthly rent
- \$4,170 ↑ in median house value
- Decrease of 29 crimes per 100,000 residents*

*Note: This result is not significant in a statistical sense.

Some Evidence

A 10 percentage point \uparrow in the rate of good-job growth over a decade correlates with:

- 0.3 percentage point \uparrow in the fraction of workers with a bachelor's degree
- 0.23 percentage point \downarrow in the fraction of workers who are high-school dropouts

Why are these outcomes desirable?

- Higher wage income permits for greater consumption
- Higher property values represent an increase of wealth
- Crime detracts from social well-being
- Education has strong external benefits – reinforces lower crime, greater civic participation, productivity, and income

Bad Job Growth: A Different Set of Outcomes

Among 206 metropolitan areas (1980-2000),
greater numbers of bad jobs tend to be
accompanied by:

- ✓ Lower incomes
- ✓ Lower property values
- ✓ Higher crime
- ✓ Lower educational attainment among the population

Some Evidence

A 10 percentage point \uparrow in the rate of bad-job growth over a decade correlates with:

- \$0.33 \downarrow in average hourly wages
- \$0.20 \downarrow in median hourly wages
- \$0.08 \downarrow in average hourly wages among bottom 25% of jobs*
- \$0.03 \downarrow in average hourly wages among top 25% of jobs*

*Note: This result is not significant in a statistical sense.

Some Evidence

A 10 percentage point \uparrow in the rate of bad-job growth over a decade correlates with:

- \$14.88 \downarrow in median monthly rent
- \$4,281 \downarrow in median house value
- Increase of 28 crimes per 100,000 in population*

*Note: This result is not significant in a statistical sense.

Some Evidence

A 10 percentage point \uparrow in the rate of bad-job growth over a decade correlates with:

- 0.44 percentage point \downarrow in the fraction of workers with a bachelor's degree
- 0.3 percentage point \uparrow in the fraction of workers who are high school dropouts

Average Characteristics of Workers Who Hold Good and Bad Jobs

| | Good Jobs | Bad Jobs |
|--------------------------------|----------------------|---------------------|
| % 0-8 Years of Education | 1 | 7 |
| % 9-11 Years of Education | 3 | 11 |
| % High School Diploma | 24 | 42 |
| % Some College | 31 | 26 |
| % Bachelor's Degree or More | 41 | 13 |

Average Characteristics of Workers Who Hold Good and Bad Jobs

| | Good Jobs | Bad Jobs |
|--------------------------|----------------------|---------------------|
| Years of Work Experience | 21.7 | 21.4 |
| Years of Age | 42 | 40 |
| % 25-44 Years of Age | 53 | 50 |

Average Characteristics of Workers Who Hold Good and Bad Jobs

| | Good Jobs | Bad Jobs |
|----------------|----------------------|---------------------|
| % Female | 45 | 56 |
| % Non-White | 18 | 27 |
| % Foreign-Born | 12 | 18 |
| % Married | 65 | 54 |

Growth of Good Jobs: Some Possible Determinants

- Education
- Industrial Composition
- Labor Costs
- Amenities
- Local Taxation and Expenditure

Analytical Technique

Use sample of 206 metropolitan areas to determine how “initial characteristics” correlate with “subsequent growth”

- *Characteristics in 1980 are correlated with growth between 1980 and 1990*
- *Characteristics in 1990 are correlated with growth between 1990 and 2000*

Note: In all cases, the influence of regional effects and time effects on growth are taken into account.

Education

- Good jobs tend to require greater amounts of formal schooling
- Anecdotal evidence places heavy emphasis on education as determinant of employer location decisions
- Changes in workplace technologies have increased demand for highly educated workers (i.e., workers with a bachelor's degree or more)

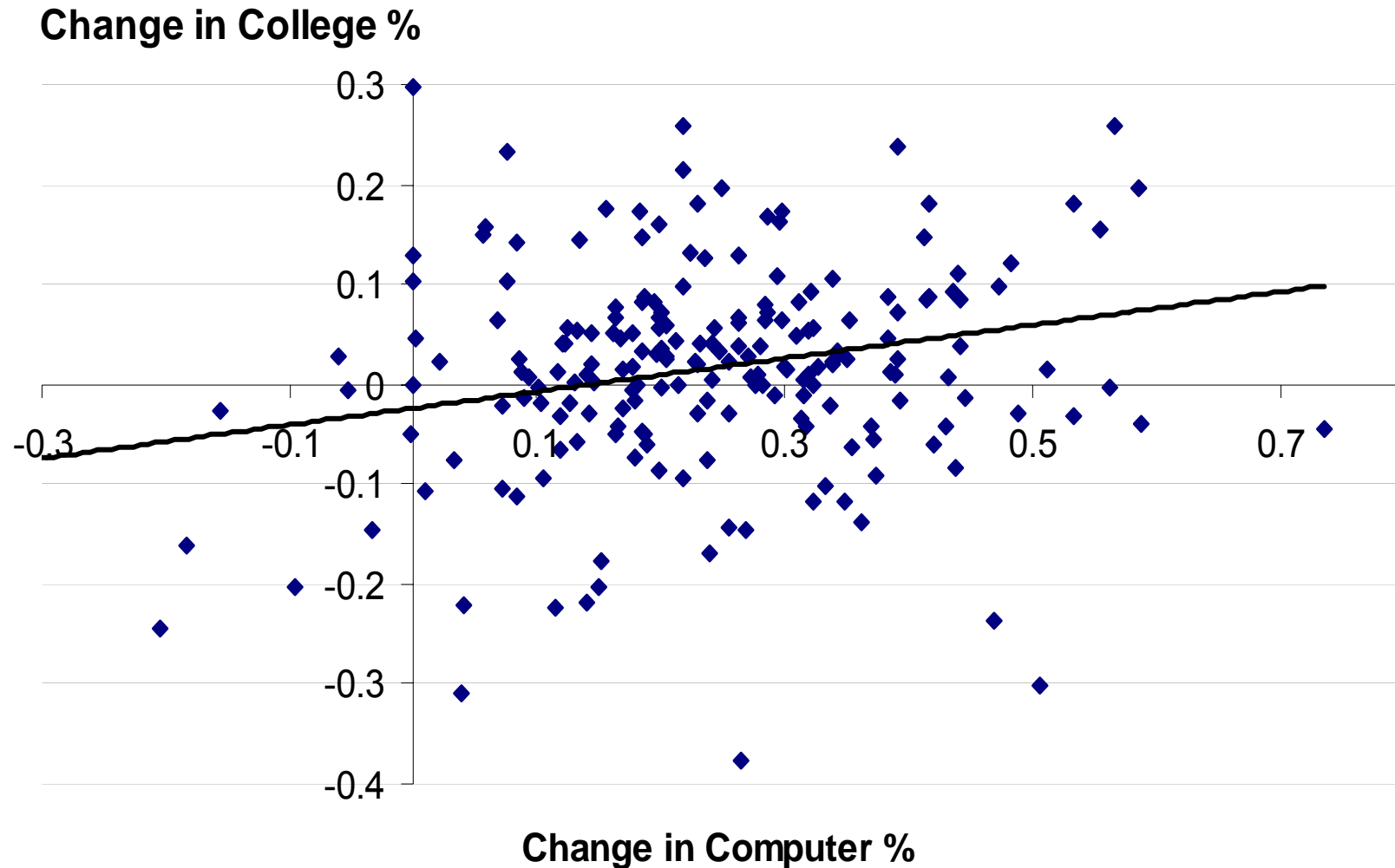
Computer Usage and Average Weekly Earnings

% Computer Usage



Notes: Plot based on CPS computer use supplements 1984-1997. Implied association: \$100 increase in weekly wages correlates with 8 percentage point increase in usage rate. 201 industries.

Change in College and Computer Use Fractions



Notes: Plot based on CPS computer use supplements 1984-1997. Implied association: 10 percentage point increase in computer use associated with 1.7 percentage point rise in college fraction. 201 industries.

Results

- General finding: higher educational attainment among a population is a *significant predictor* of good-job growth
- 10 percentage point ↑ in the fraction of workers with *bachelor's degree or more* is associated with a 5.3 percentage point ↑ in the rate of good-job growth

Results

- 10 percentage point \uparrow in the fraction of workers with *only a high school diploma* is associated with a 6.7 percentage point \downarrow in rate of good-job growth
- Other findings: growth of bad jobs and total employment are also positively influenced by level of education

Industrial Composition

- Types of industries may reflect types of skills present among a local labor force

Example: manufacturing – goods production

- Employers require inputs/services so the presence of certain types of industries may influence location decisions

Example: legal services, advertising, consulting

Industries Considered

- Manufacturing
- Wholesale and retail trade
- Finance, insurance, real estate
- Business and repair services
- Other services

Results

- General finding: presence of one major industry is significantly associated with good-job growth
- 10 percentage point ↑ in fraction of employment in *finance, insurance, real estate* corresponds to 14.7 percentage point ↑ in rate of good-job growth

Results

- Fraction of workers in manufacturing is not significantly associated with good-job growth
- But, fraction of good jobs accounted for by manufacturing *is*
- 10 percentage point \uparrow in *fraction of good jobs accounted for by manufacturing* is associated with a 2.4 percentage point \downarrow in the rate of good-job growth

Interpretation

- Likely reflects a “skill” shortage
- Workers in good jobs reflect most “skilled” members of a labor force
- Provides employers offering good jobs with a sense of how qualified a local labor force is

- Manufacturing workers tend to possess less formal education

Example: In the year 2000, the fractions of workers with a bachelor's degree or higher was

17 % in manufacturing

24.5 % in all other industries

28 % in "good" manufacturing jobs

36 % in all other good jobs

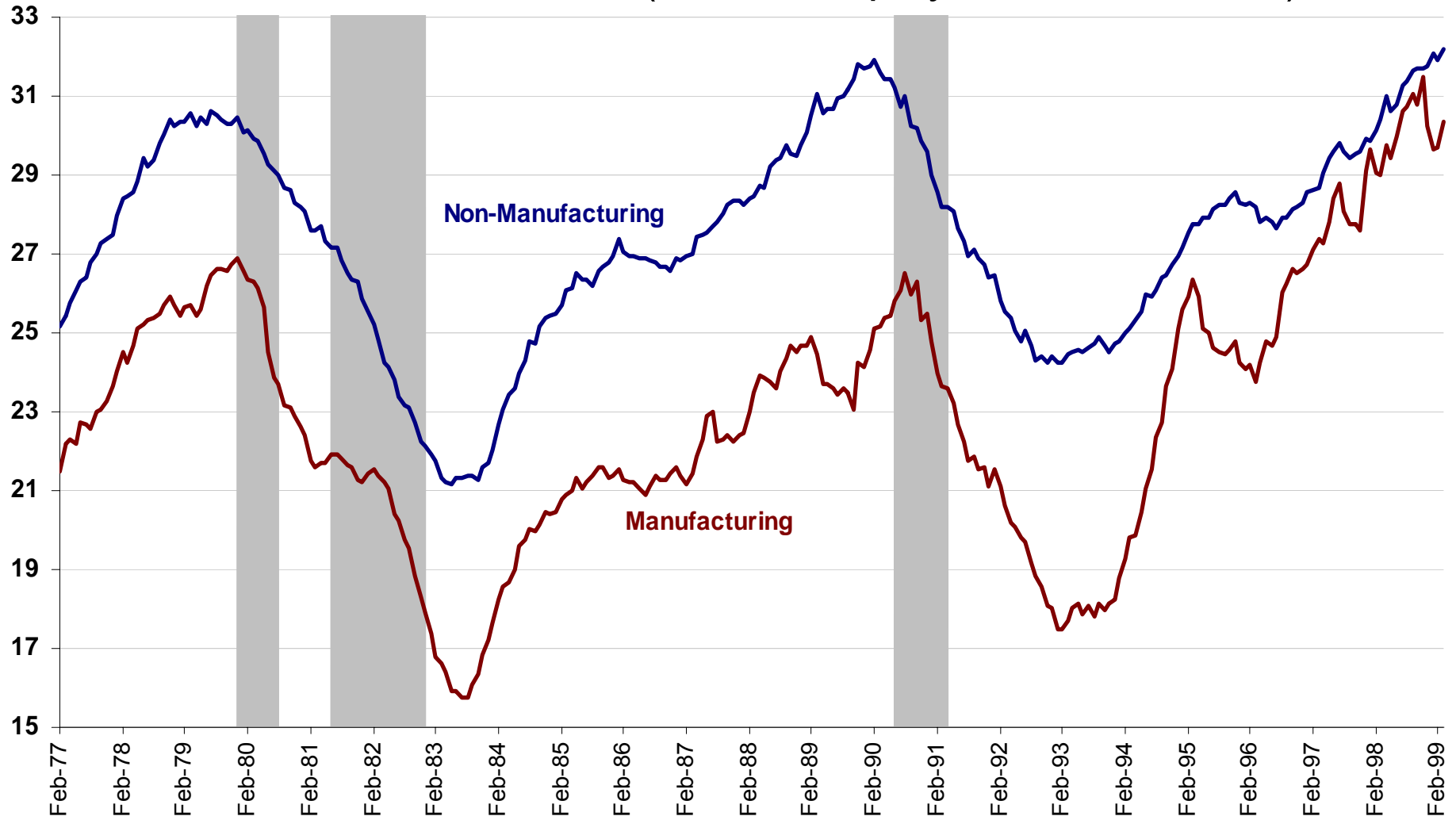
- Workers displaced from manufacturing jobs tend to have greater difficulty finding another job

Example: Re-employment rate for displaced workers between 2001 and 2003

60 % for workers displaced from manufacturing

65 % for all workers

Escape Rates from Unemployment into Employment, by Sector of Previous Employment (% of unemployed in each sector)



Source: Bleakley, Ferris, Fuhrer (1999)

Labor Costs

- All else equal, employers offering all types of jobs would prefer to pay lower costs, including wages
- All else equal, employers prefer greater flexibility when dealing with workers (hours, benefits, work conditions)

Results

- General finding: higher rates of union membership and wage earnings correspond to significantly lower rates of good-job growth
- 10 percentage point \uparrow in the *fraction of union members in a labor force* corresponds to 7.4 percentage point \downarrow in the rate of good-job growth

Results

- \$1 ↑ in a metropolitan area's *average hourly wage* is associated with a 0.8 percentage point ↓ in the rate of good-job growth
- \$1 ↑ in the *median wage* is associated with a 2.5 percentage point ↓ in the rate of good-job growth

Some Comments

- Results should not be taken as implying that high wages are bad for growth – only when all else is held constant
- Illustrates an “equalization” mechanism – relatively low-wage areas attract employers, wages rise bringing them closer to high-wage areas

Amenities

- Workers are also consumers
- The types and quantities of amenities (cultural, educational, or entertainment outlets) may affect the desirability of a metropolitan area

Amenities Considered

- Eating and drinking places
- Movie theaters
- Live entertainment venues
- Museums, botanical gardens, zoos
- Elementary schools
- Colleges and universities
- Hospitals
- Climate (average January and July temperature)
- Fraction of workers between 25 and 44 years of age

Results

- General finding: Some amenities show statistically important associations with good-job growth, but the magnitudes are small
- Greater numbers of eating and drinking places, movie theaters, live entertainment venues, and colleges and universities correspond to faster good-job growth
- 10 percent ↑ in the *number of these amenities* correlates with a 0.2 percentage point ↑ in good-job growth

Strongest Finding

- Metropolitan areas with warm climates grow faster
- Higher average January and July temperatures correspond to significantly faster good-job growth
- Result is tied to movement of U.S. population to the South and West

Local Taxation and Expenditure

- All else equal, employers and workers prefer lower taxes
- Yet, some employers and workers may desire local governments to spend more on certain 'goods' (e.g. schools, roads)

Quantities Considered

- Per capita tax revenue
- Per capita property tax revenue
- Per capita education expenditures
- Per capita public welfare expenditures
- Per capita highway expenditures
- Per capita police expenditures

Results

- General finding: None of these variables are significant predictors of good-job growth
- All but per capita property taxes show negative associations, but none are significant
- Similar results hold when per capita tax revenues are expressed as a fraction of per capita income

St. Louis

- Total employment growth 1980-2000:
29 % \approx 244,000 jobs
- Growth of **good** jobs 1980-2000:
20.1 % \approx 47,000 jobs
- Growth of **bad** jobs 1980-2000:
33.7 % \approx 63,000 jobs

Average across 206 U.S. Metropolitan Areas

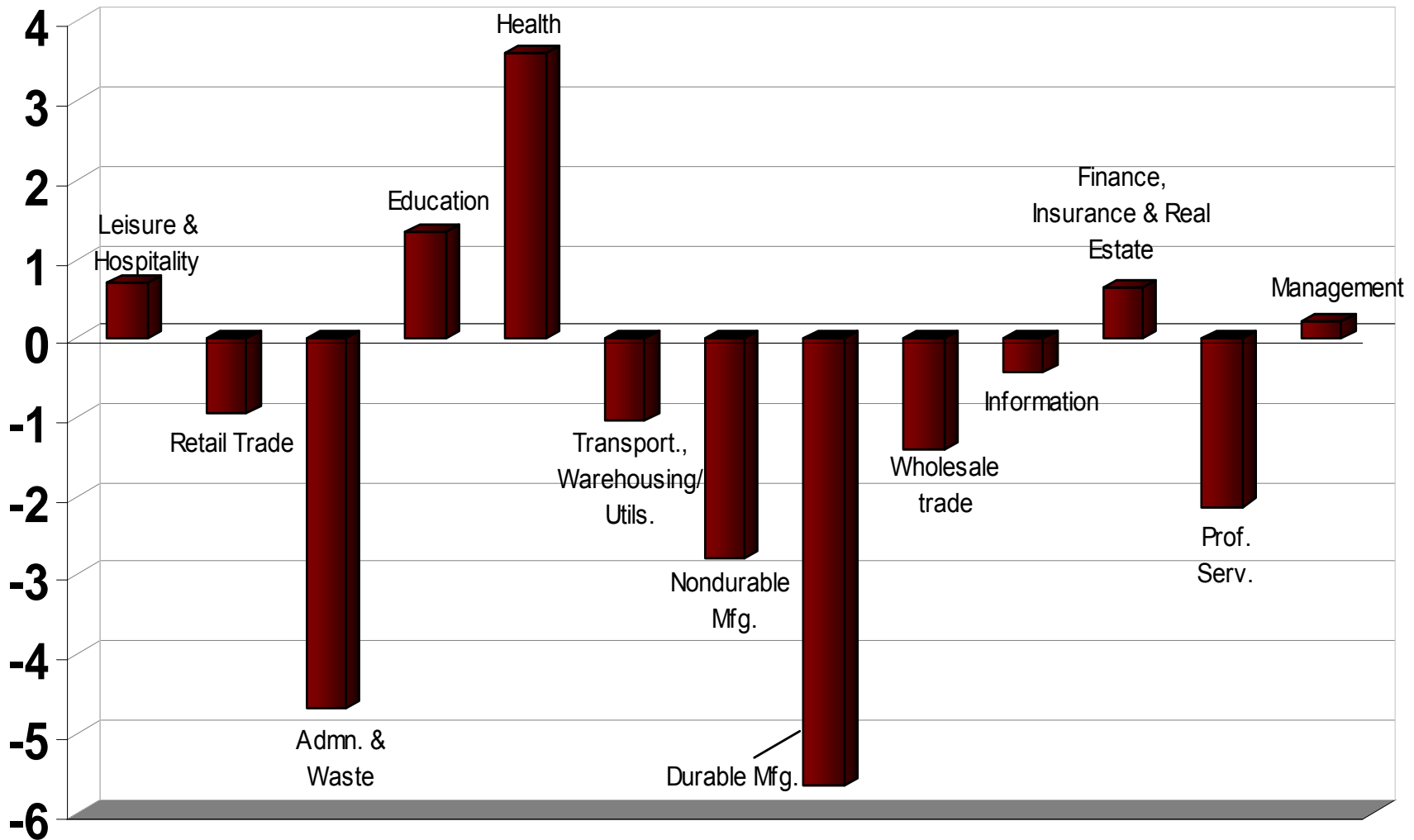
- Total employment growth 1980-2000:
37.1 % (median = 34.1%)
- Growth of **good** jobs 1980-2000:
35.9 % (median = 36%)
- Growth of **bad** jobs 1980-2000:
42.4 % (median = 38.7%)

Some Characteristics of St. Louis

- Top good-job growers: offices of physicians; legal services; computer and data processing; security brokerage and investment; engineering, architectural and surveying services; guided missiles, space vehicles and parts
- Top bad-job growers: eating and drinking places; social services; nursing and personal care; grocery stores; services to dwellings

Employment Changes by Industry: St. Louis, March 2001 - November 2001 Recession

Thousands

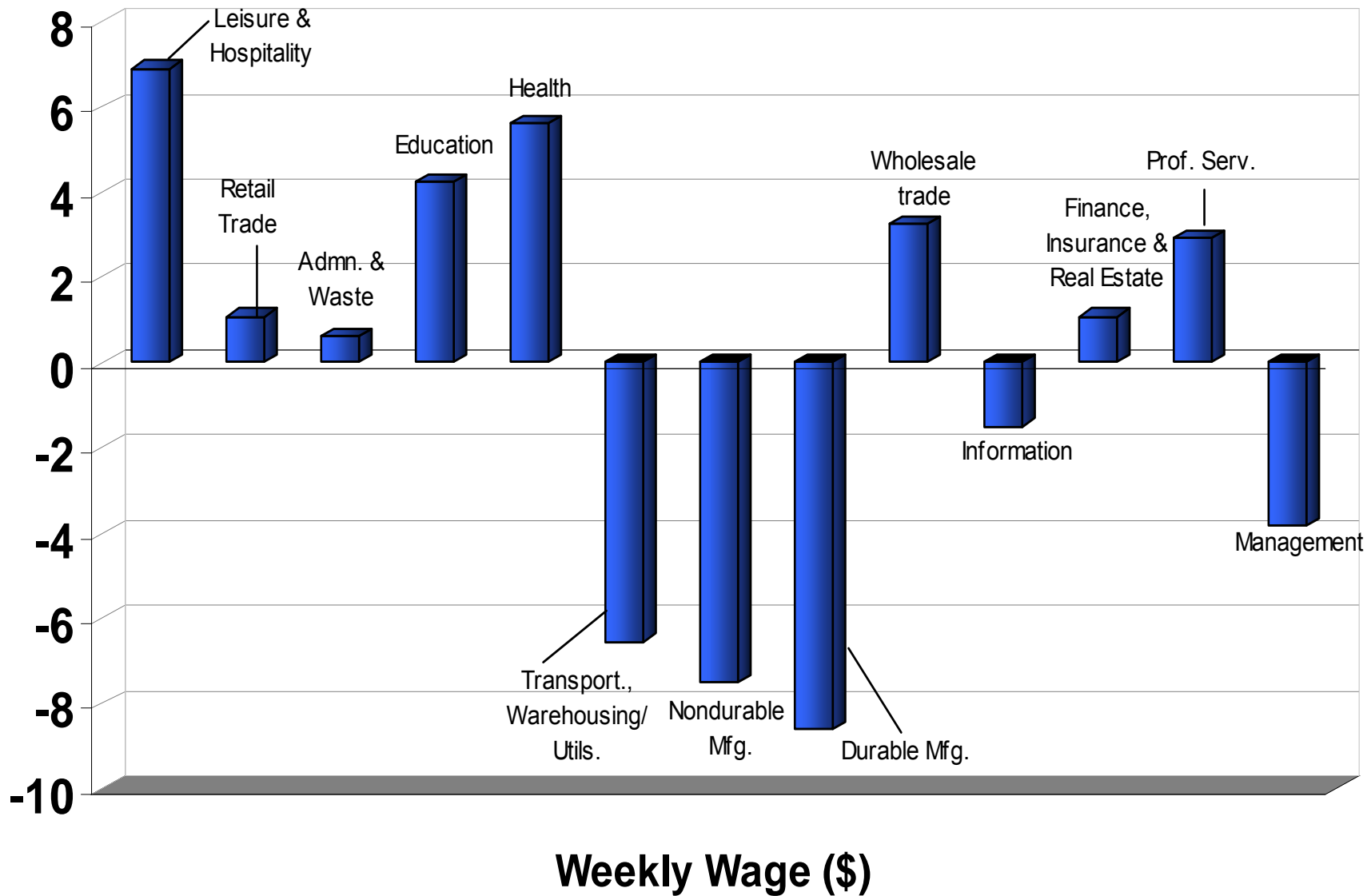


Weekly Wage (\$)

Source: Bureau of Labor Statistics

Employment Changes by Industry: St. Louis, November 2001 - June 2005

Thousands



Source: Bureau of Labor Statistics

Some Characteristics of St. Louis

| | 1980 | 1990 | 2000 |
|-----------------------------------|---------------|---------------|---------------|
| % High School | 42 (42.6) | 36.3 (37.6) | 32 (34.4) |
| % College | 18 (17.5) | 23.5 (21.4) | 27.8 (24.6) |
| % Manufacturing | 27.7 (25.3) | 21.1 (19.7) | 16.8 (17.4) |
| % Good Jobs in Manufacturing | 38.7 (26.2) | 31.6 (22.1) | 21.6 (20) |
| % Finance, Insurance, Real Estate | 6.7 (6.6) | 8 (7) | 7.6 (6.5) |
| % Union | 25.8 (20.7) | 15.6 (14.4) | 14.5 (12.7) |
| Mean hourly wage (\$) | 17.10 (15.71) | 17.94 (16.11) | 19.23 (17.83) |
| Median hourly wage (\$) | 12.96 (11.54) | 12.68 (11.39) | 13.94 (12.53) |

Slow Growth in St. Louis

- Relatively high unionization
- High labor costs
- Traditional importance of manufacturing
- Lagging educational attainment

Education and Growth: Metro Areas with at least 1 million residents

- Average rate of good-job growth
1980-2000: 46% (20% in St. Louis)
- Average fraction of population with a
bachelor's degree or higher
in the year 2000: 29% (27.8% in St. Louis)

Other Large Metro Areas

| Metro Area | Good Job Growth 1980-2000 (%) | % College in 2000 |
|----------------------|--|--------------------------|
| Atlanta | 143 | 33.2 |
| Boston | 99.8 | 39.2 |
| Washington DC | 81.3 | 38.2 |
| Minneapolis-St. Paul | 63.2 | 34 |
| Seattle | 60 | 33 |
| Denver | 58 | 34 |
| Houston | 33 | 27 |
| New York | 32 | 35.3 |
| St. Louis | 20 | 27.8 |
| Chicago | 17 | 31.5 |

Summary and Conclusions

- Evidence suggests that labor force characteristics are most important in explaining variation in good-job growth
 - Education
 - Industry composition
 - Unions/Average labor costs
- Amenities (e.g. entertainment outlets) have non-negligible effects
- Little support for significant influence of basic government taxation/expenditure policies

Summary and Conclusions

- Promoting good-job growth best achieved through policies that improve education
- “Virtuous cycle”—educated workers draw producers offering good jobs which attracts educated workers ...
- Supporting education is a feasible way to begin this process
- Political drawback: change is slow

Some Recent Numbers

- State revenue per pupil: \$2948 (\$4284)
- Total revenue per pupil: \$8131 (\$8702)
- Per pupil expenditures for instruction:
\$4277 (\$4702)
- Total expenditures per pupil:
\$8085 (\$8809)

- Missouri's total teacher salary rank: 44th
- Missouri's expenditure per pupil rank: 39th

Source: Missouri Department of Elementary and Secondary Education Factsheet March 2005, and National Center for Education Statistics Common Core of Data 2001-2002

Additional Benefit

An educated workforce is flexible

- Highly educated workers adapt to changes in technology, the growth and decline of industries, international and regional trade better than less educated workers
- Betting on one particular “hot” industry is risky
- An educated workforce provides some insulation from industry shifts