



Workforce Development and the Role of Human Capital

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Background

- Federal Reserve has a monetary policy mandate to promote maximum employment.
- This mandate and the labor market's slow recovery from the recession has motivated the Richmond Fed to study long-run strategies to improve labor market outcomes for individuals.
- What can be done to:
 - improve nation's skills and *average* earnings?
 - workers' *adaptability* to changing labor market conditions?
- That is, what can be done to *develop the workforce*?

Workforce Development (WD)

- WD has many dimensions:
 - The “coordination side” — Regional, state, or local efforts to coordinate schools, firms, and workers
 - The “adult workforce” side — Retraining and assisting with job search and matching
 - The “human capital” side — Focus is on individual-level decisions to invest in skills
- Today, we will focus on the role of human capital in WD.

The Human Capital Lens

- This is a way of thinking about the data, especially on the life experiences of people when it comes to their income and education.
- People are not just consumers: they're little *factories* too. And, factories plan and augment their capabilities.
- This concept used to be controversial. Now, all of us talk about “investing in ourselves.”

The Human Capital Lens: Implications

- The future matters ...
 - Small differences in relative strengths can lead to big differences in outcomes.
 - Age matters for the benefits from training.

The Human Capital Lens: Implications

- Most schooling happens early in life.
- Earnings grow more steeply when you are younger, more slowly when older.
- Higher income means fewer, more skilled children.

My Goal and a Few Punchlines

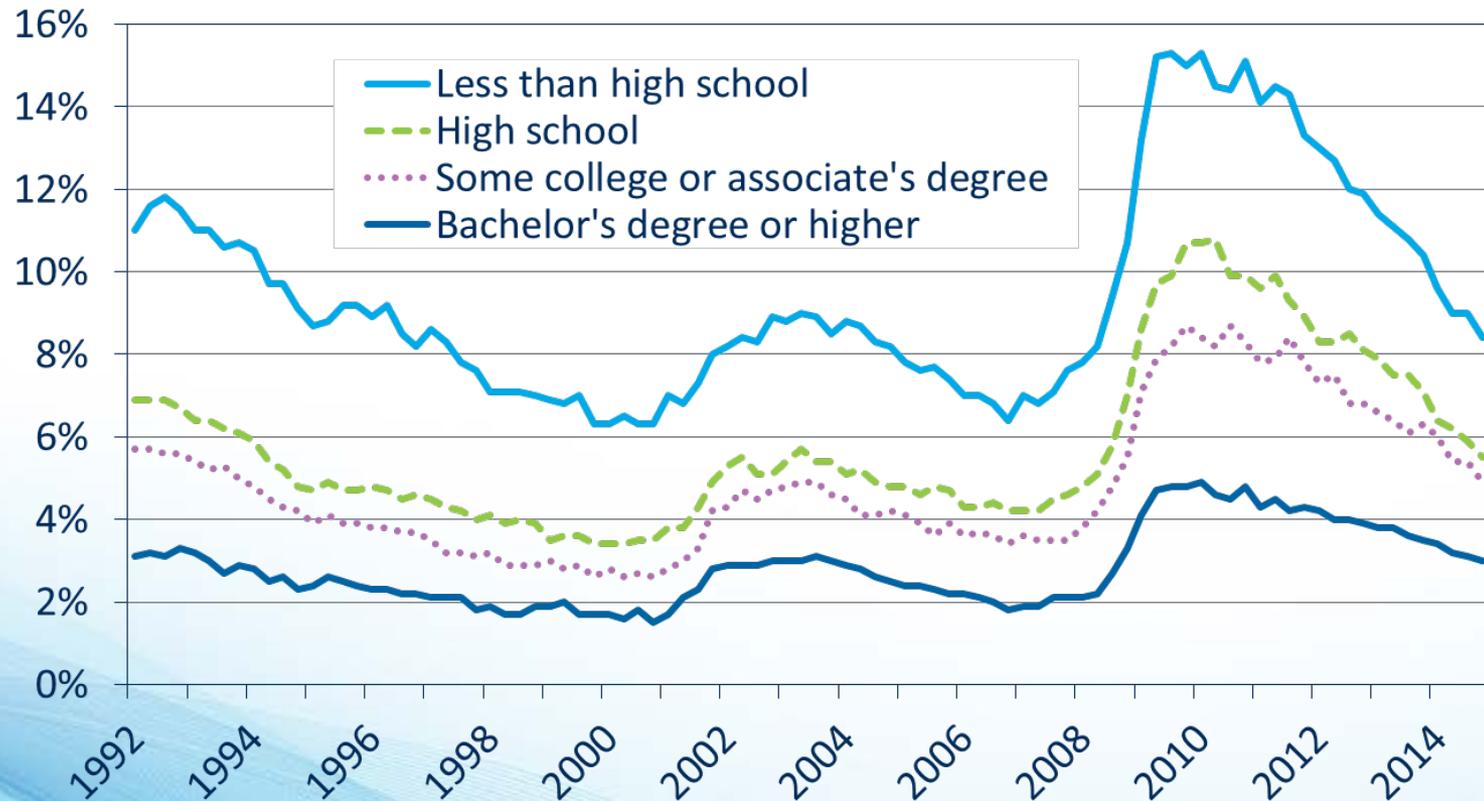
- Some aspects of human capital have bearing for the populations that WD efforts aim to assist.
- As we'll see, a central implication is that adult WD is fighting a heroic battle “at the back end,” when research suggests that it could really use help “at the front end.”
- Let's focus on human capital as primarily formal education.

Overview

- College completion typically leads to positive labor market experience.
- But there are caveats:
 - Not everyone who enrolls in college completes.
 - College may not be the best path for all students.
 - We may be seeing a leveling-off in the college attainment rate.
- Preparedness and good information are important for choosing the right path and succeeding.
- Challenges faced by adult workforce efforts may be mitigated by targeting people when they are young.

College Completion Has Long Inoculated Against Unemployment

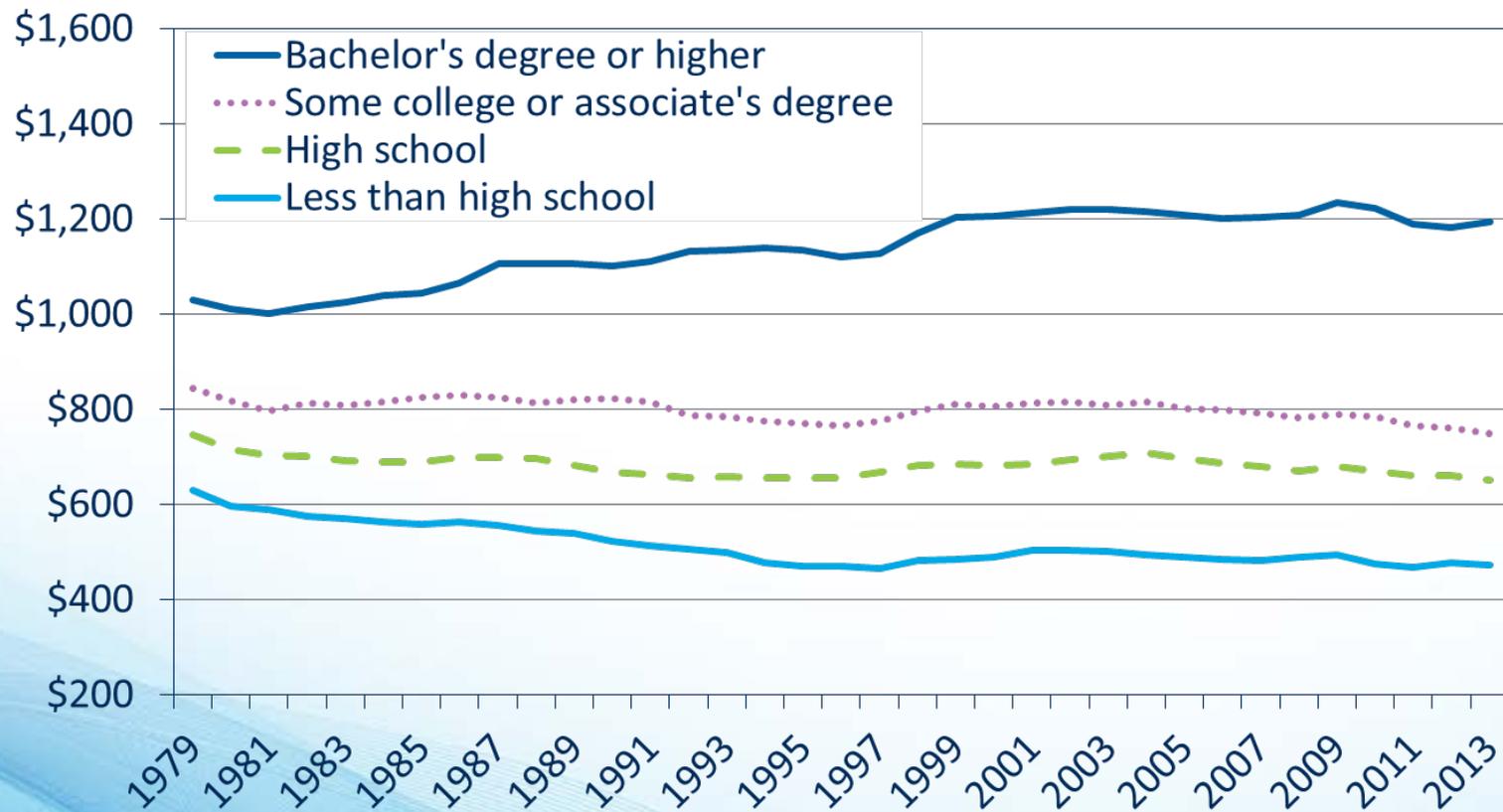
Unemployment rate, workers 25 years and over



Source: Bureau of Labor Statistics

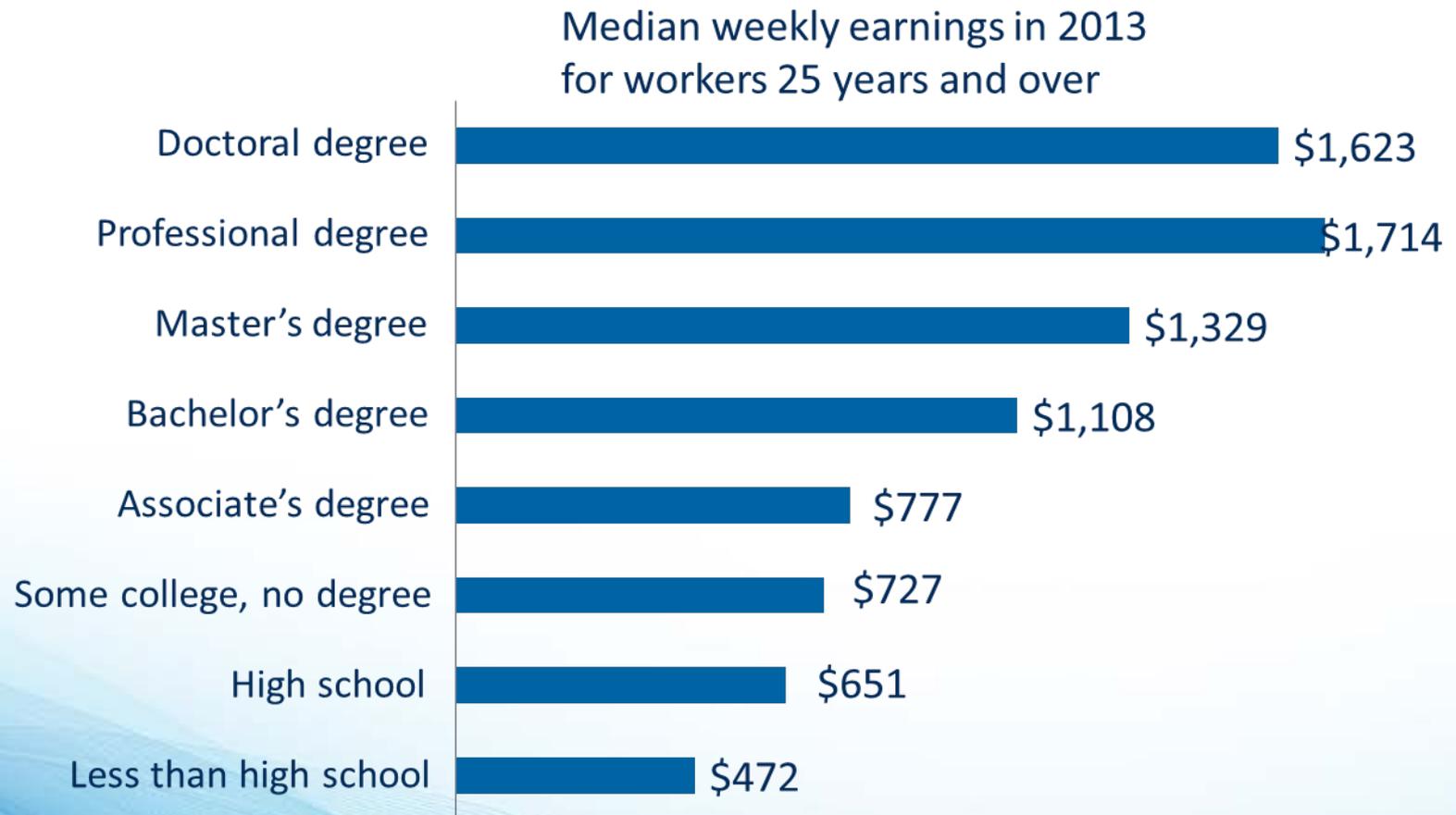
Higher Ed Has Long Delivered Earnings Payoffs, Which Have Steadily Increased

Median weekly earnings, workers 25 years and over (2013 constant dollars)

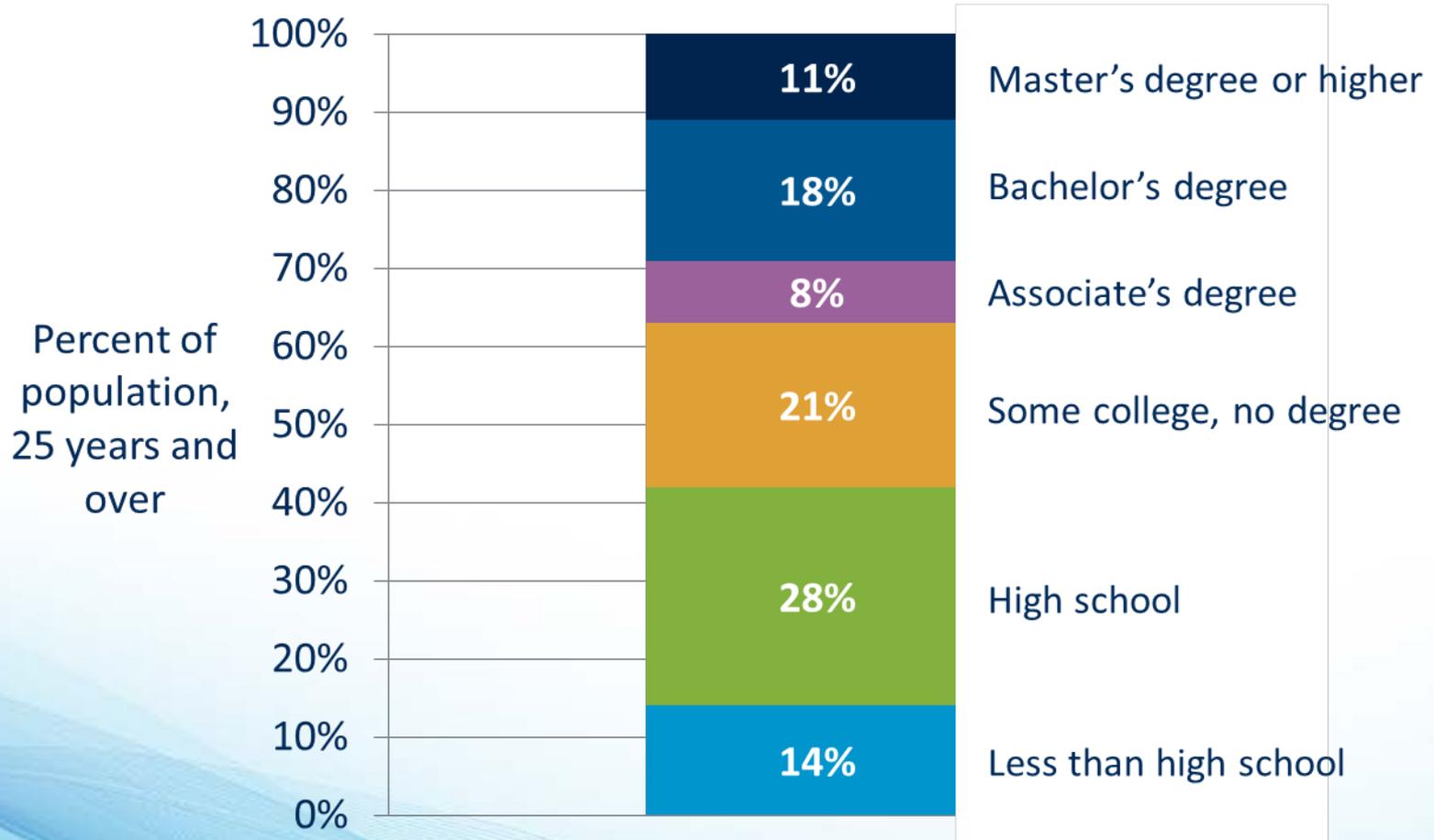


Source: Bureau of Labor Statistics

Finer Breakdown of Earnings

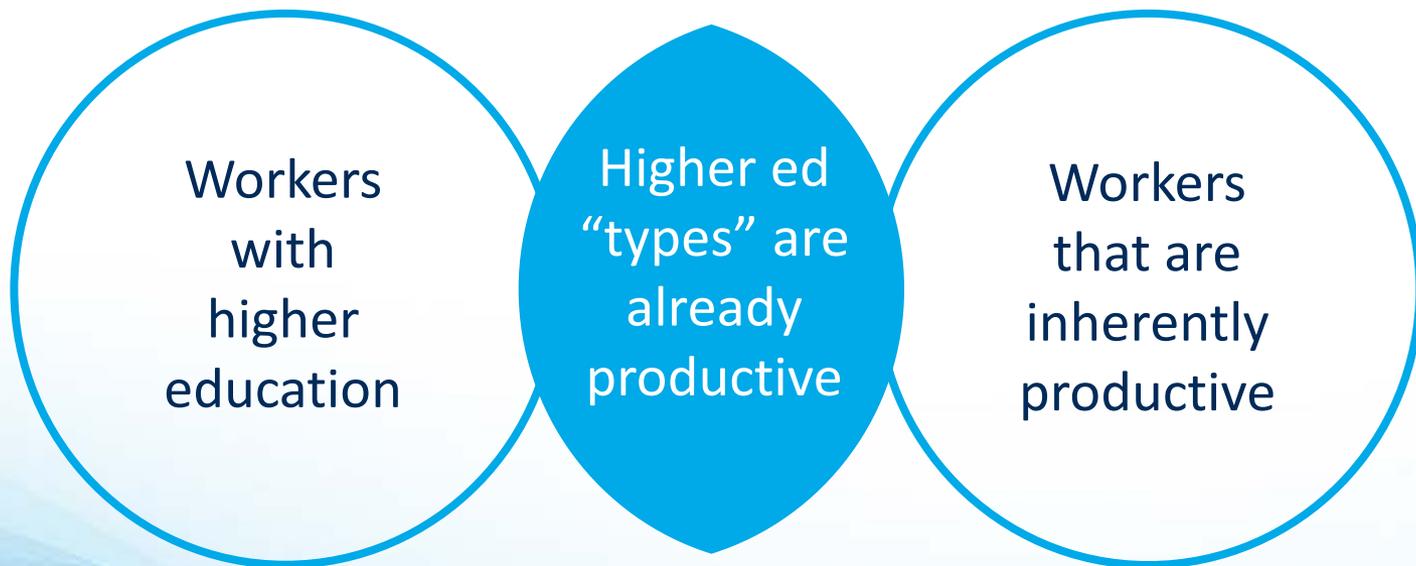


Educational Attainment of U.S. Population



Returns to Higher Ed Look Good, But There Are Potential Biases in the Data

Ability bias



Workers
with
higher
education

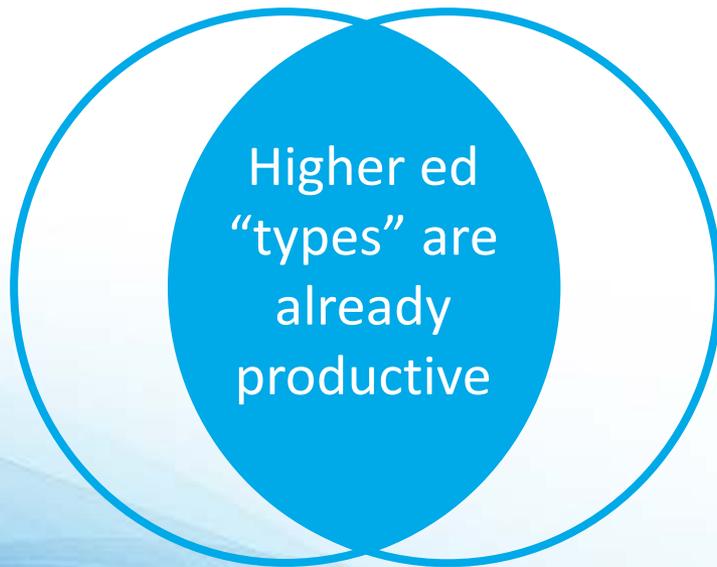
Higher ed
"types" are
already
productive

Workers
that are
inherently
productive

Returns to Higher Ed Look Good, But There Are Potential Biases in the Data

Ability bias

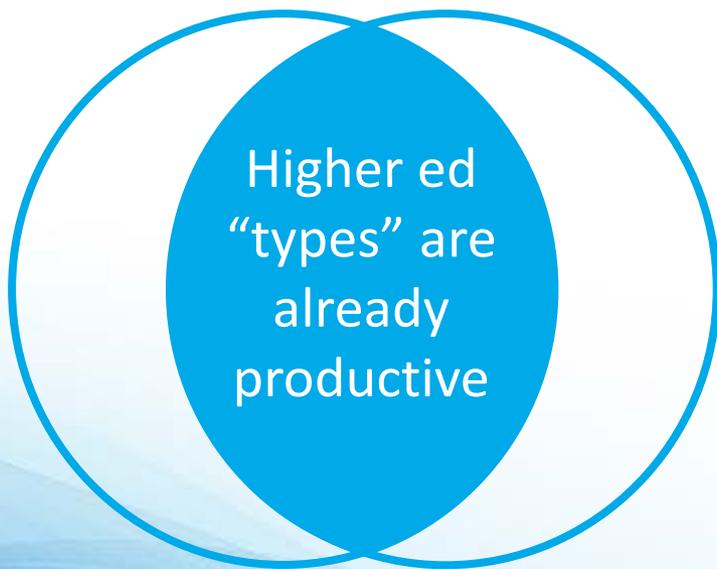
Selection bias



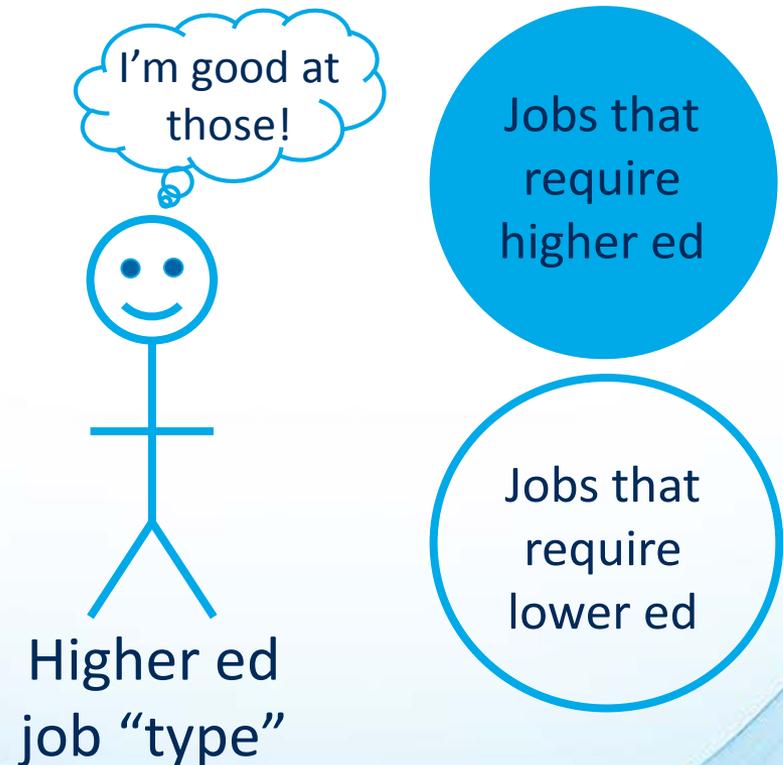
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Returns to Higher Ed Look Good, But There Are Potential Biases in the Data

Ability bias



Selection bias



Need College Prep, Not Just College Enrollment

- This means, first of all, ensuring high school completion.
- Then, we have to ensure that students are well-prepared.
- Students appear to both:
 - overstate their own preparedness
 - understate its importance — relative to study effort — in college completion (Stinebrickner and Stinebrickner, 2012).

Dimensions of Preparedness



Academic
ability



Work
habits



Knowing
options

Prepping for Completion and Workforce

- **Early Childhood** experiences seem to matter a lot for hard and soft skills.
- **MS/HS** appear to be a good time for exploring options and further building soft skills.
- **Schools and Community college** can help students assess preparedness and explore other postsecondary options.



Are Community Colleges the Solution?

- May offer students flexibility to experiment and learn about their own ability, which is critical to completion.

Average Tuition and Fees	Average Total Price of Attendance	Total Aid		Total Grants		Student Loans	
		Percent Receiving	Average Amount	Percent Receiving	Average Amount	Percent Receiving	Average Amount
\$1,047	\$6,100	46.8	\$3,200	39.8	\$2,200	12.1	\$3,600

Transfer to 4-year college	Associate's Degree	Certificate	Job Skills	Personal Interest	Transfer to Another College
36.5	42.8	17.0	41.6	46.0	15.3

Vocational Training and Jobs of Tomorrow

- Vocational education appears to make entry into the labor market easier.
- However, the specialized nature of these skills make them not easily adaptable to new technologies.
- Rapid technological change may thus pose challenges later in life for workers who are trained narrowly in certain skills.

Fear of Technology

“The rise in unemployment has raised some new alarms around an old scare word: automation. How much has the rapid spread of technological change contributed to the current high of 5,400,000 out of work? ... While no one has yet sorted out the jobs lost because of the overall drop in business from those lost through automation and other technological changes, many a labor expert tends to put much of the blame on automation. ... Dr. Russell Ackoff, a Case Institute expert on business problems, feels that automation is reaching into so many fields so fast that it has become "the nation's second most important problem." (First: peace.) The number of jobs lost to more efficient machines is only part of the problem. What worries many job experts more is that automation may prevent the economy from creating enough new jobs. ... Throughout industry, the trend has been to bigger production with a smaller work force. ... Many of the losses in factory jobs have been countered by an increase in the service industries or in office jobs. But automation is beginning to move in and eliminate office jobs too. ... In the past, new industries hired far more people than those they put out of business. But this is not true of many of today's new industries. ... Today's new industries have comparatively few jobs for the unskilled or semiskilled, just the class of workers whose jobs are being eliminated by automation.”

- Time Magazine
- February 24th
-**1961.**

Fear of Technology

National Council on Technology, Automation, and Economic Progress :

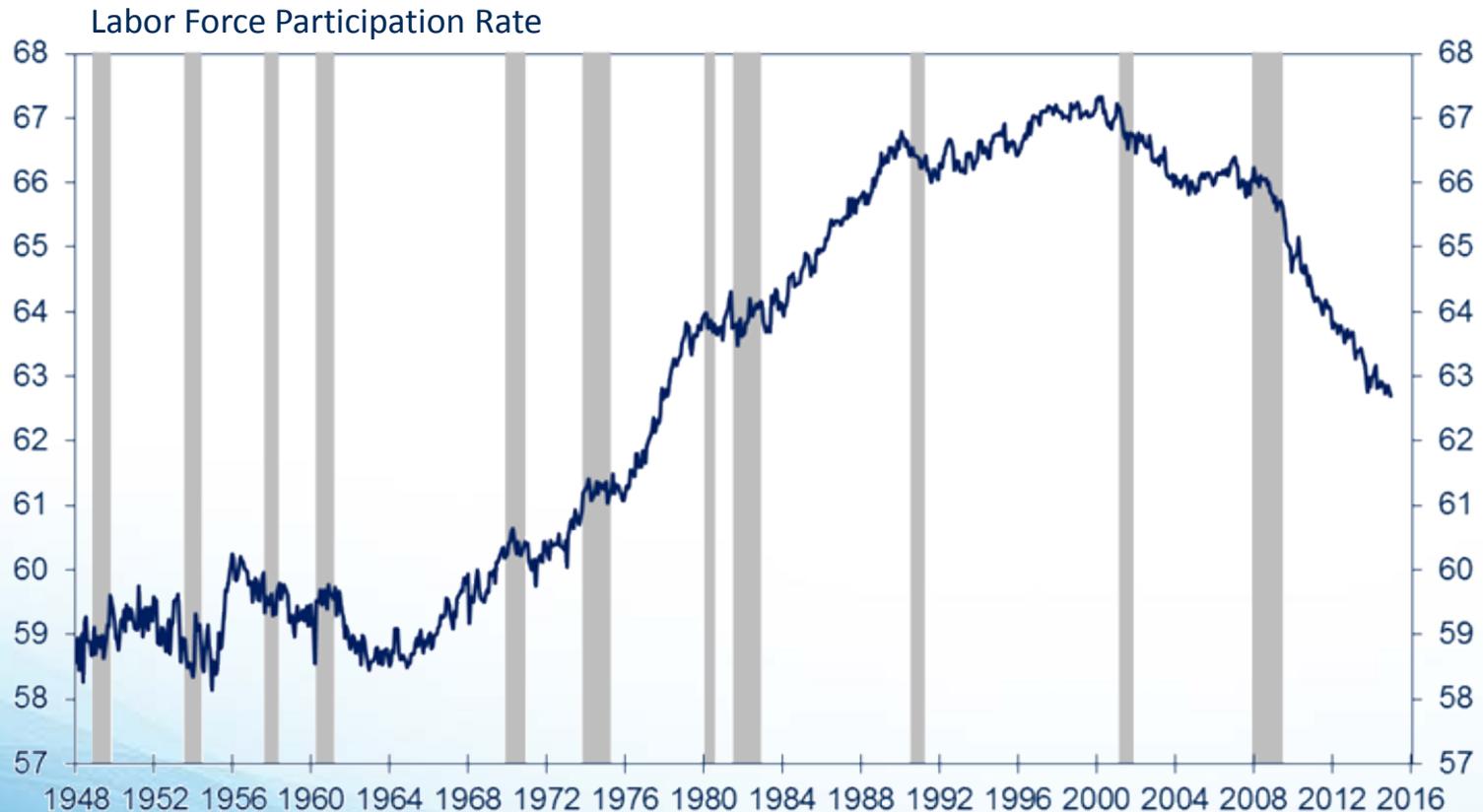
"We recommend compensatory education for those from disadvantaged environments, improvements in the general quality of education, universal high school education and opportunity for 14 years of free public education, elimination of financial obstacles to higher education, lifetime opportunities for education, training, and retraining ..."

"We recommend the creation of a *national computerized job-man matching system* which would provide more adequate information on employment opportunities and available workers on a local, regional, and national scale. In addition to speeding job search, such a service would provide better information for vocational choice ..."

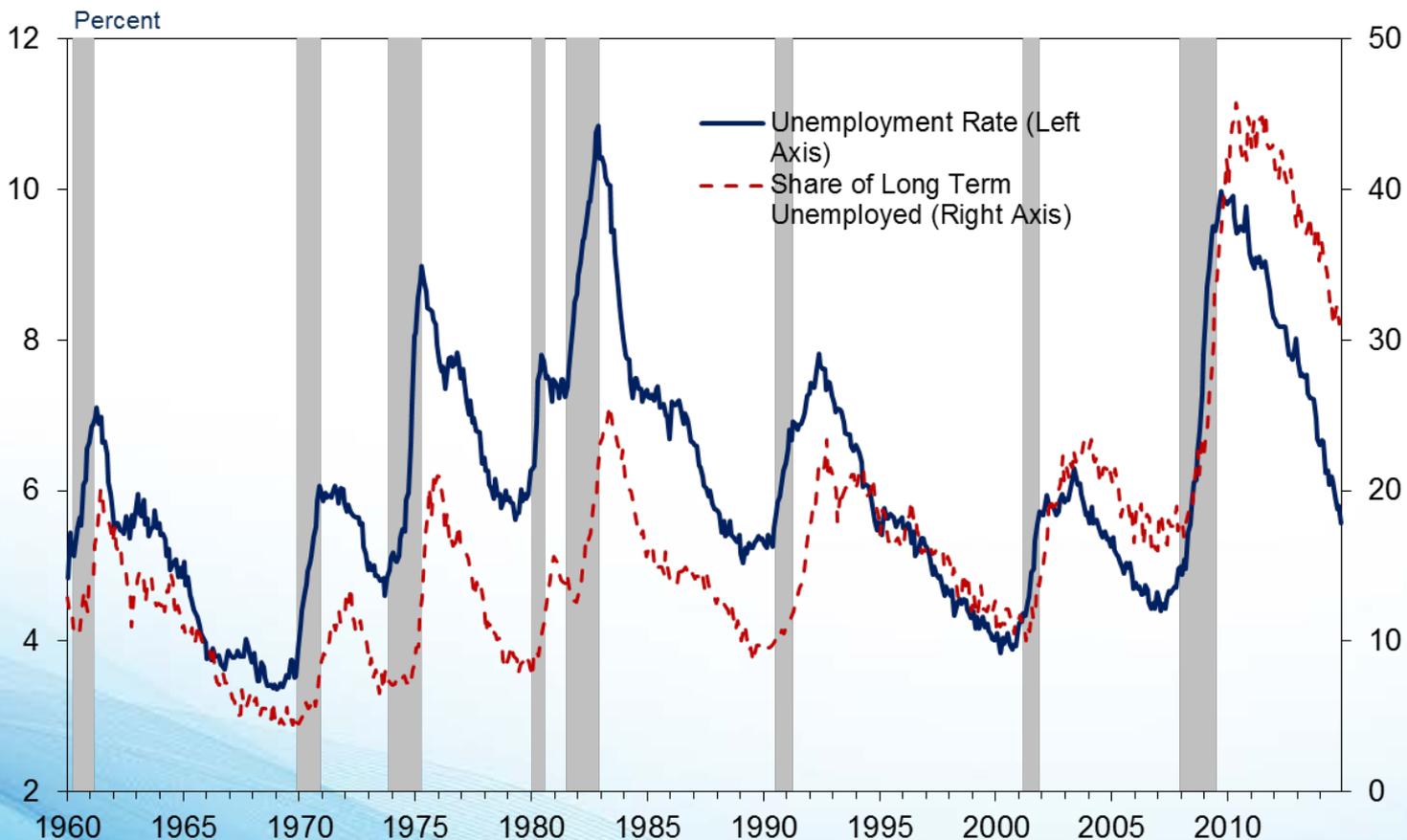
"We recommend that present experimentation with relocation assistance to workers and their families stranded in declining areas be developed into a permanent program."

"We recommend ... regional technical institutes to serve as centers for disseminating scientific and technical knowledge relevant to the region's development ..."

Will the Robots Take Our Jobs?



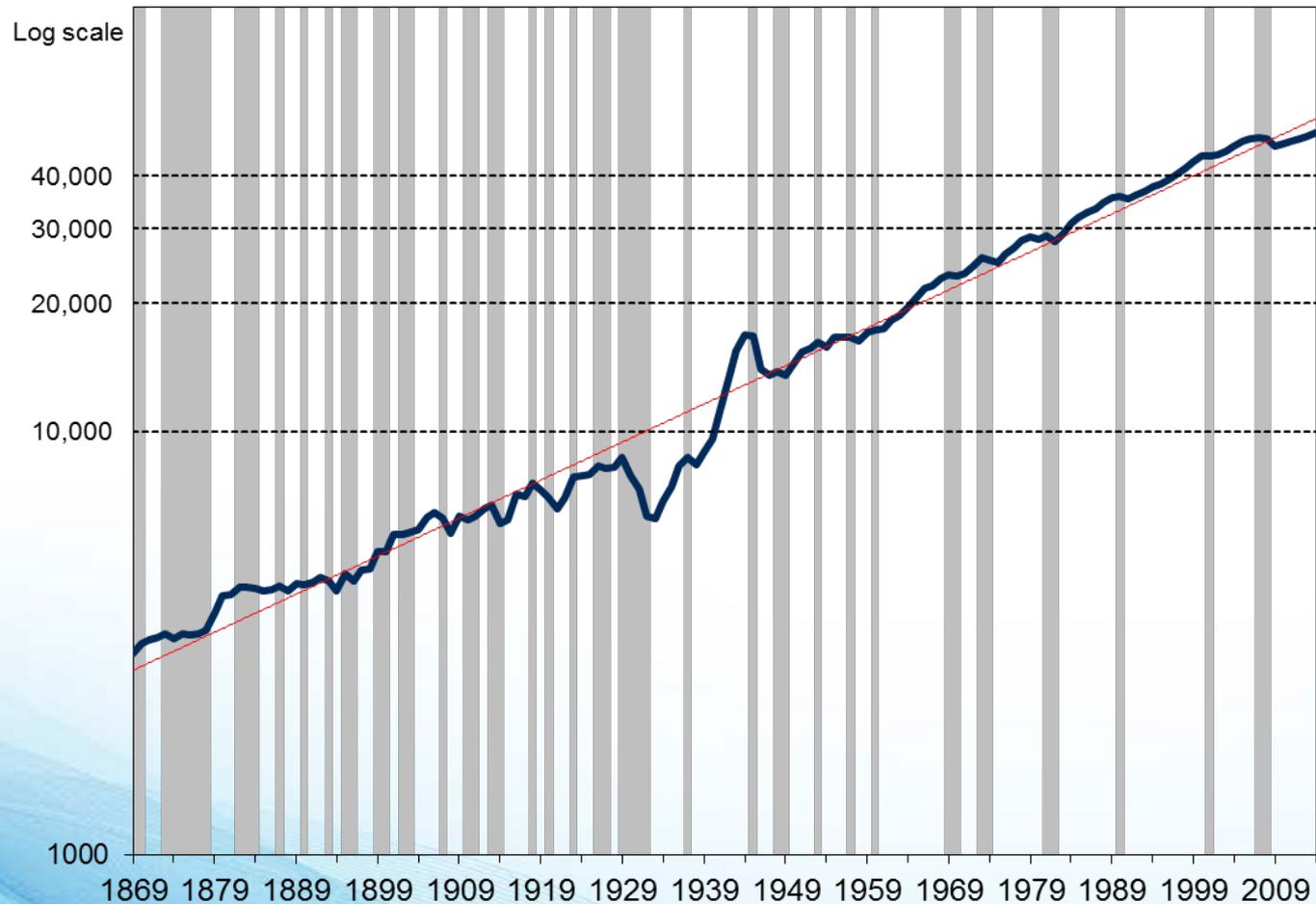
Unemployment Rates Show No Long-Term Trend



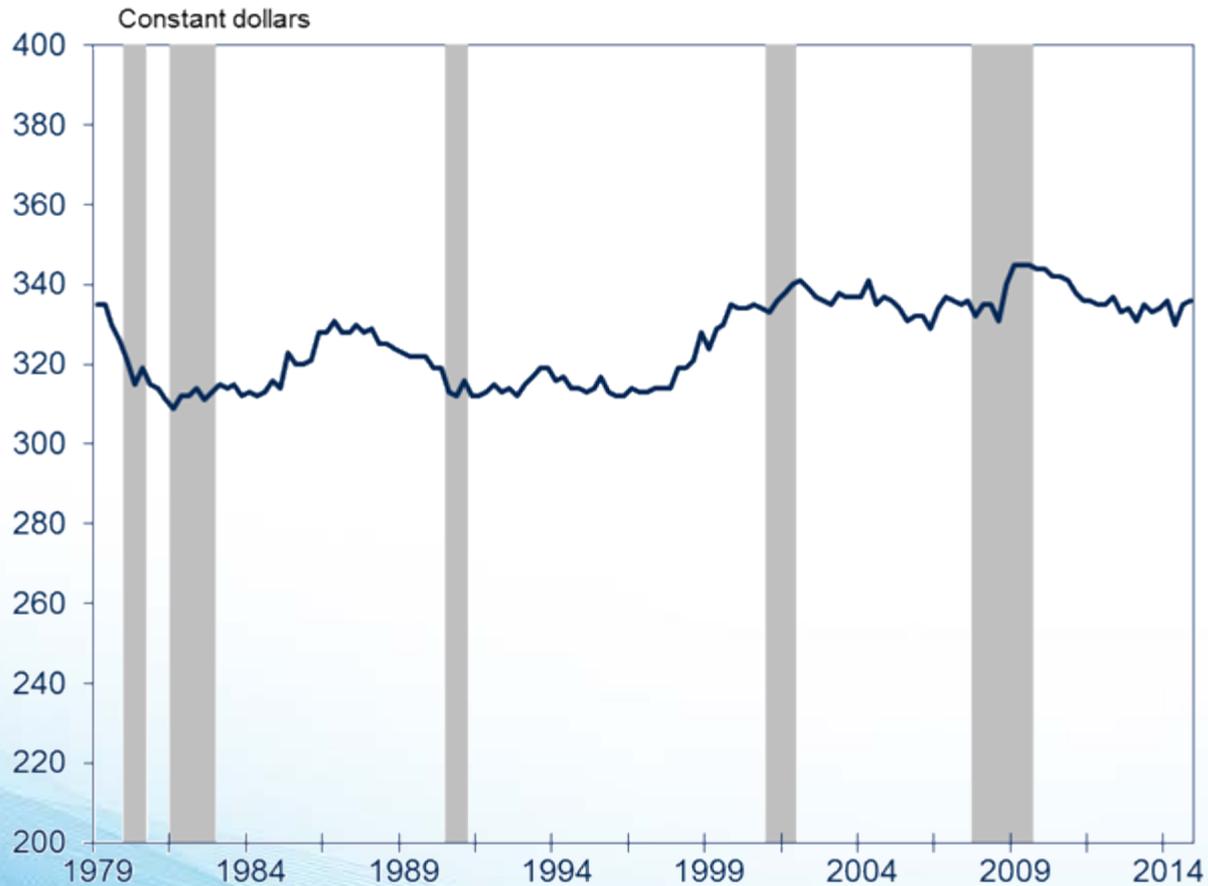
Technological Progress is the (Sole) Engine of Prosperity

- In the most widely accepted model of economic growth:
 - Investment and work effort have only temporary effects.
 - Long-run growth comes solely from better methods of production.
 - You can't muscle your way to permanent growth, only via innovation!
 - Much innovation embedded in new machines, robots among them.

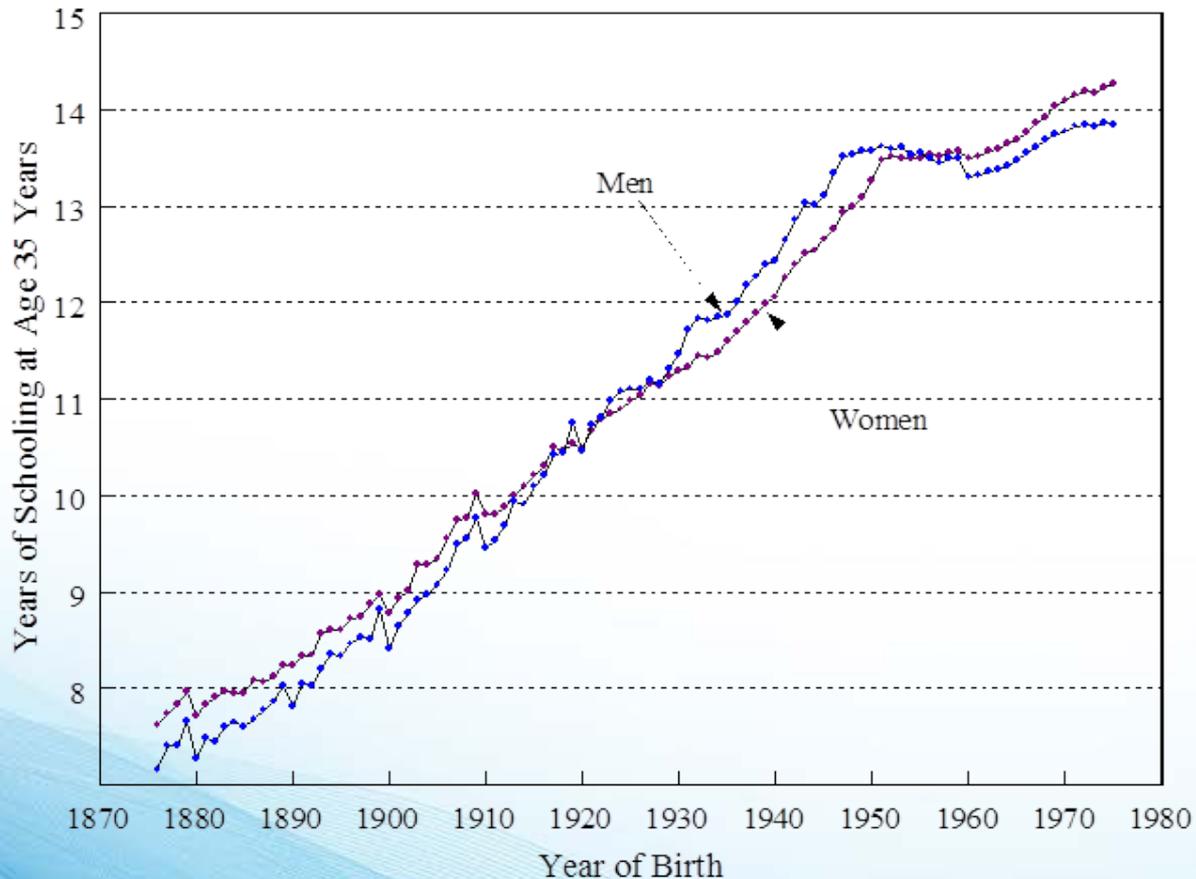
Real Per-Capita GDP



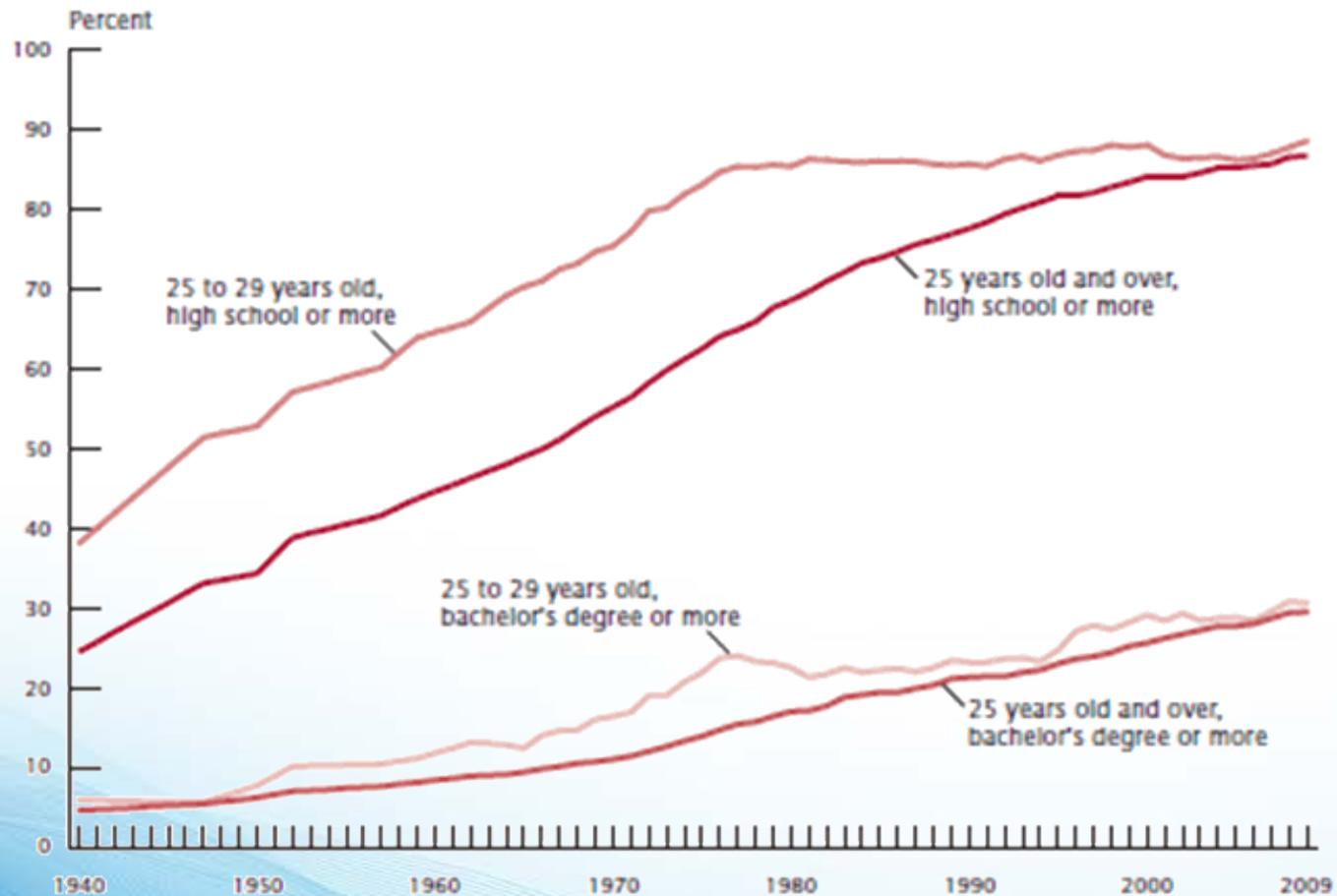
Median Usual Weekly Earnings



Supply Response to Skill-Biased Technological Change is Now Weak



Key Issue for WD: Are We Hitting a Barrier?



Adult Workforce Considerations

- Adult population that needs workforce training is usually highly “selected.”
- Numerous risks during working life
 - Unemployment
 - Displacement (rare for long-tenured workers but very scarring when it does happen)
 - Occupational

Adult Workforce Considerations

- Individuals' resilience tends to increase with their level of broad-based human capital investment. Half of the dispersion in earnings is attributable to learning experience prior to labor market entry.
- Yet we don't know whether people are fully aware of the long-term consequences of their early human capital decisions.

Key Lessons

- **Completion** is important at every stage.
- **Preparedness** (including having good information) can help students choose the best path for themselves and ultimately complete that path.
- Workforce development efforts **targeting younger populations** can have high payoffs in the long run.
- Success of **adult workforce partly depends on early-life** decisions and outcomes.
- **Technology** has long been a friend of workers.



The views expressed here are those of the author, and do not necessarily represent those of the Federal Reserve Bank of Richmond or the Federal Reserve System.