
Trends In Labor Force Supply And Demand

*Wisconsin Family Impact Seminar
Madison, WI
November 4, 2015*

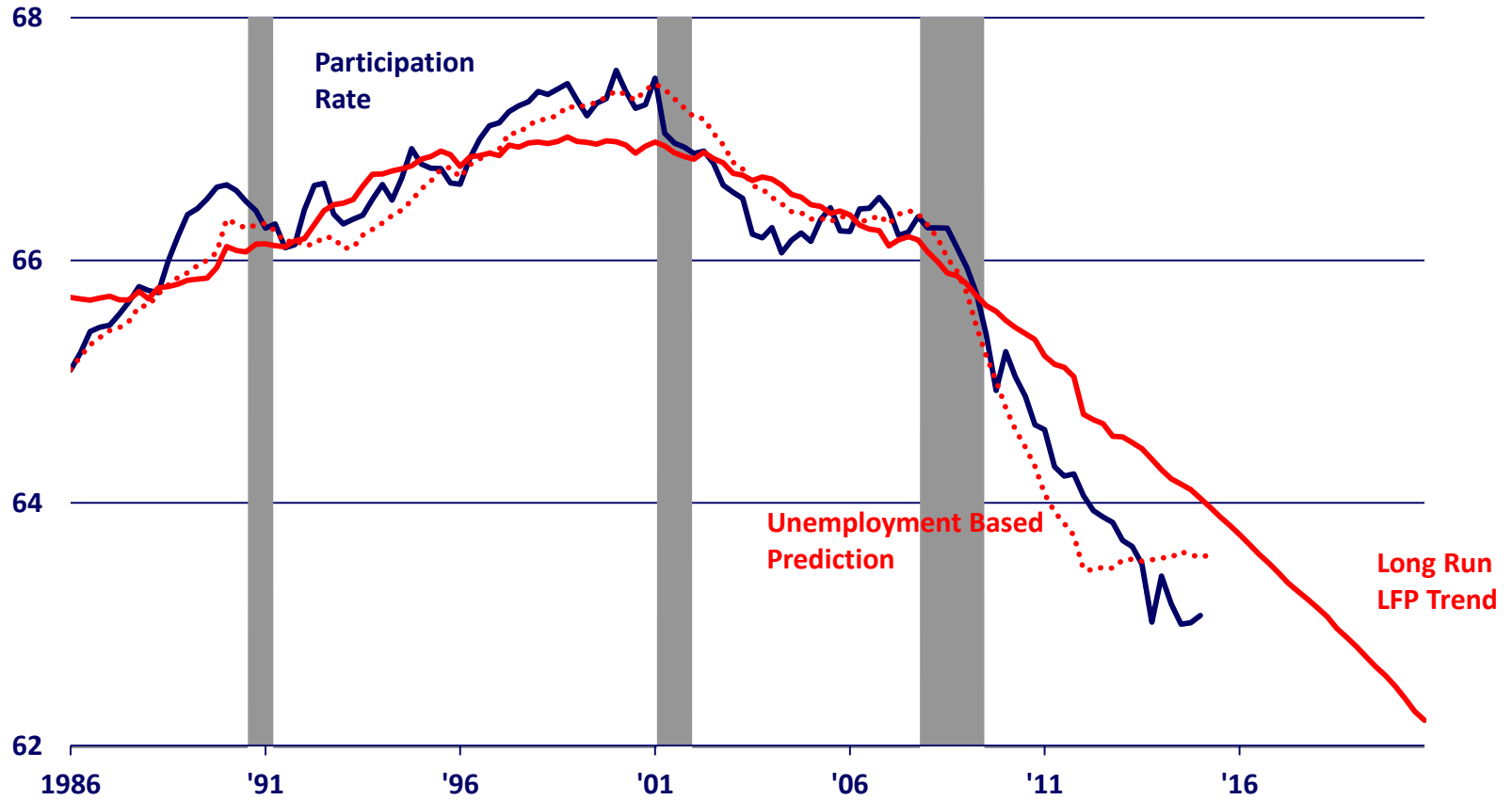
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Executive Vice President and Director of Research
Federal Reserve Bank of Chicago

Main Points

- **Demographics and other long-running trends imply that the U.S. labor force will grow more slowly in the years ahead**
 - Slower growth in labor supply may pose a challenge for employers
 - The future labor force will also be older and better educated
- **Standard industrial and occupational projections foresee a continuation of past trends**
 - E.g., a declining share of employment in manufacturing
- **Such projections are highly uncertain**
 - It is always difficult to anticipate key trends
 - Industry workforces are aging at different rates with implications for future job openings
- **Hard and soft skills likely to be of increasing importance**
 - Returns to academic and vocational skills remain high
 - Technology and international competition are eroding employment opportunities for workers doing many routine tasks

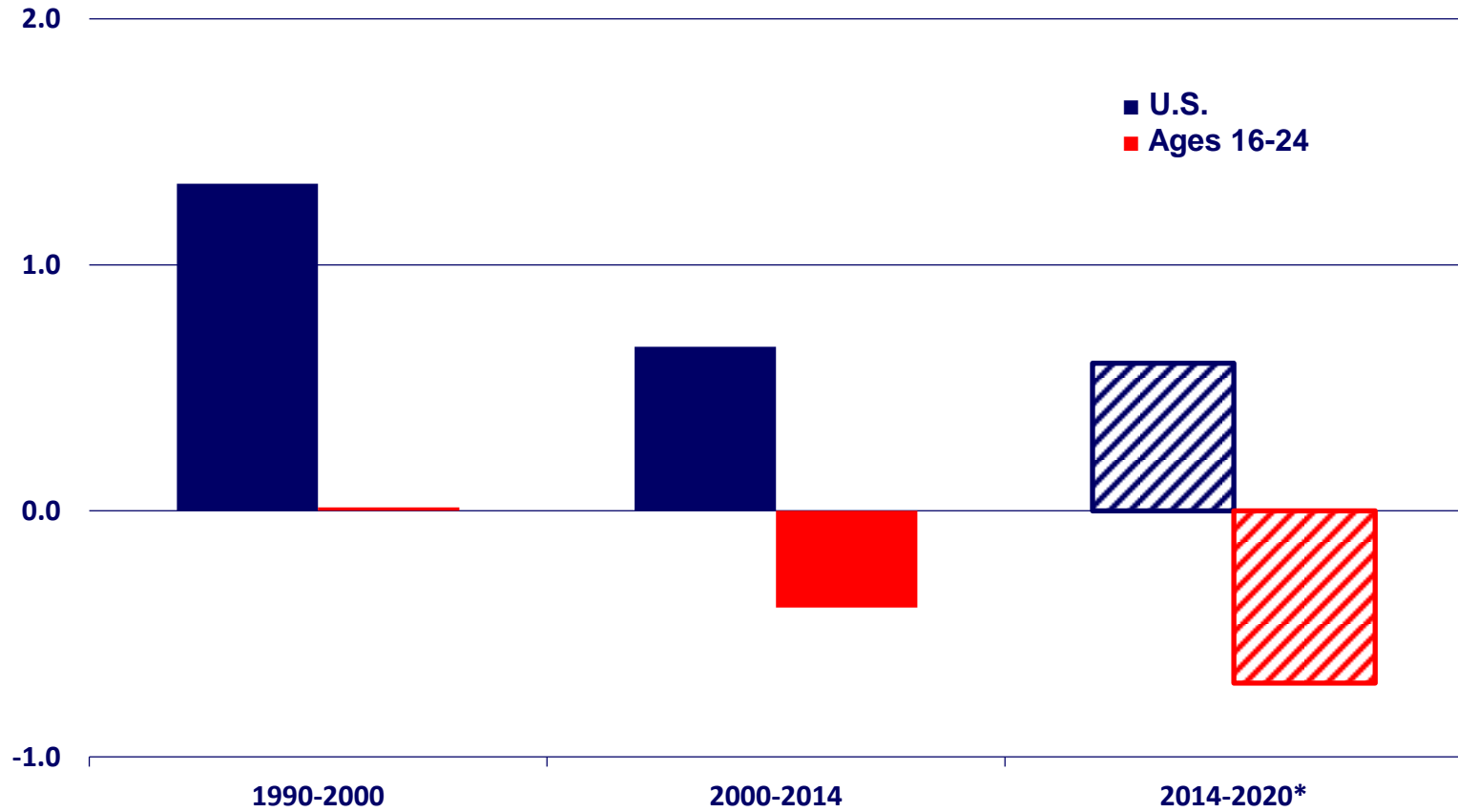
Labor Force Participation Rate is Falling

Ages 16+
(percent)



Labor Force Growth Has Slowed

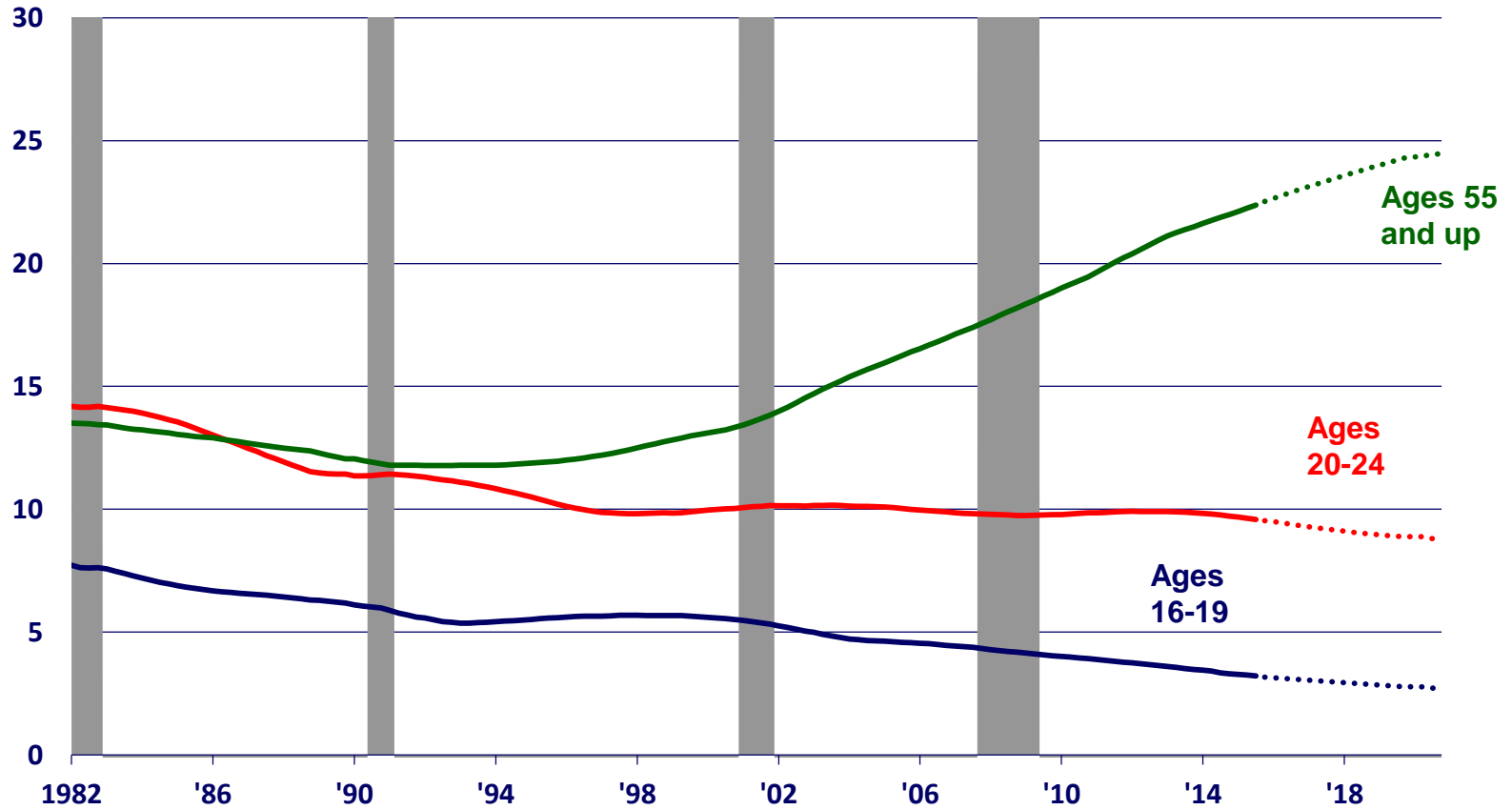
Labor Force Growth
(percent)



* Chicago Fed staff projections

Labor Force Share by Age

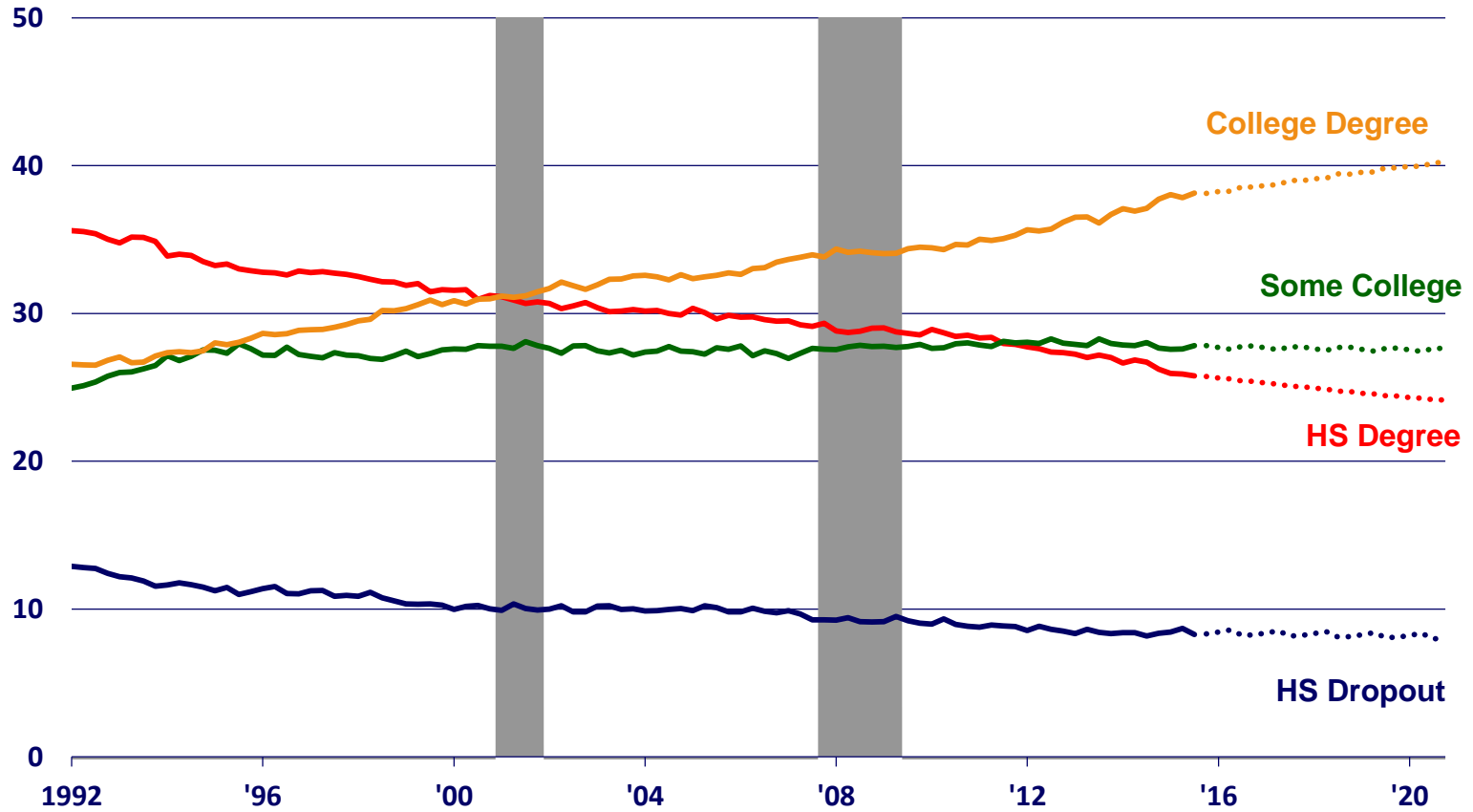
Labor Force Share
(percent)



Projections prepared by Chicago Fed staff

Labor Force Share by Education

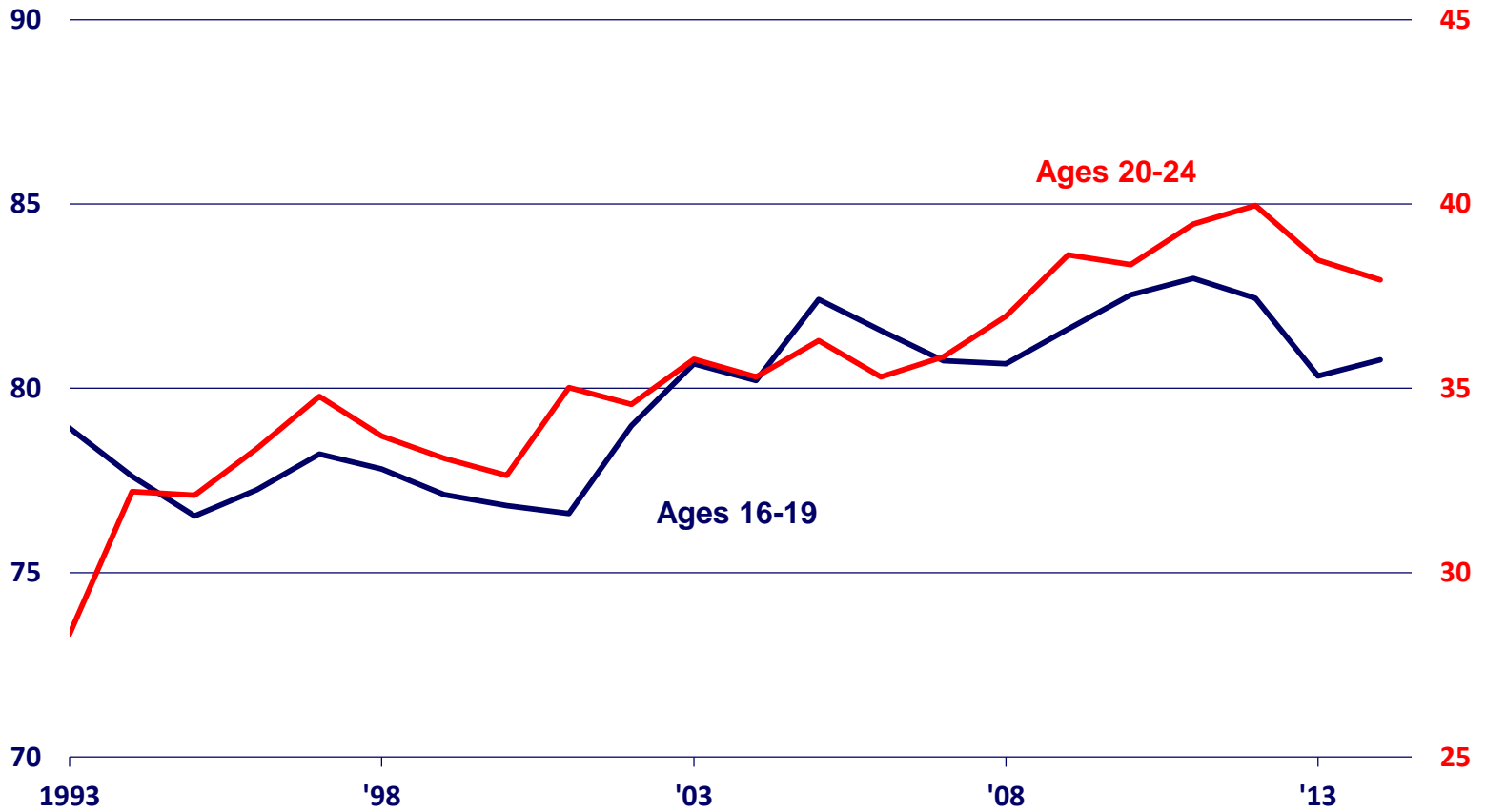
Labor Force Share – Ages 25 and Older
(percent)



Projections prepared by Chicago Fed staff

School Attendance Has Been Rising

Share of Population in School
(percent)

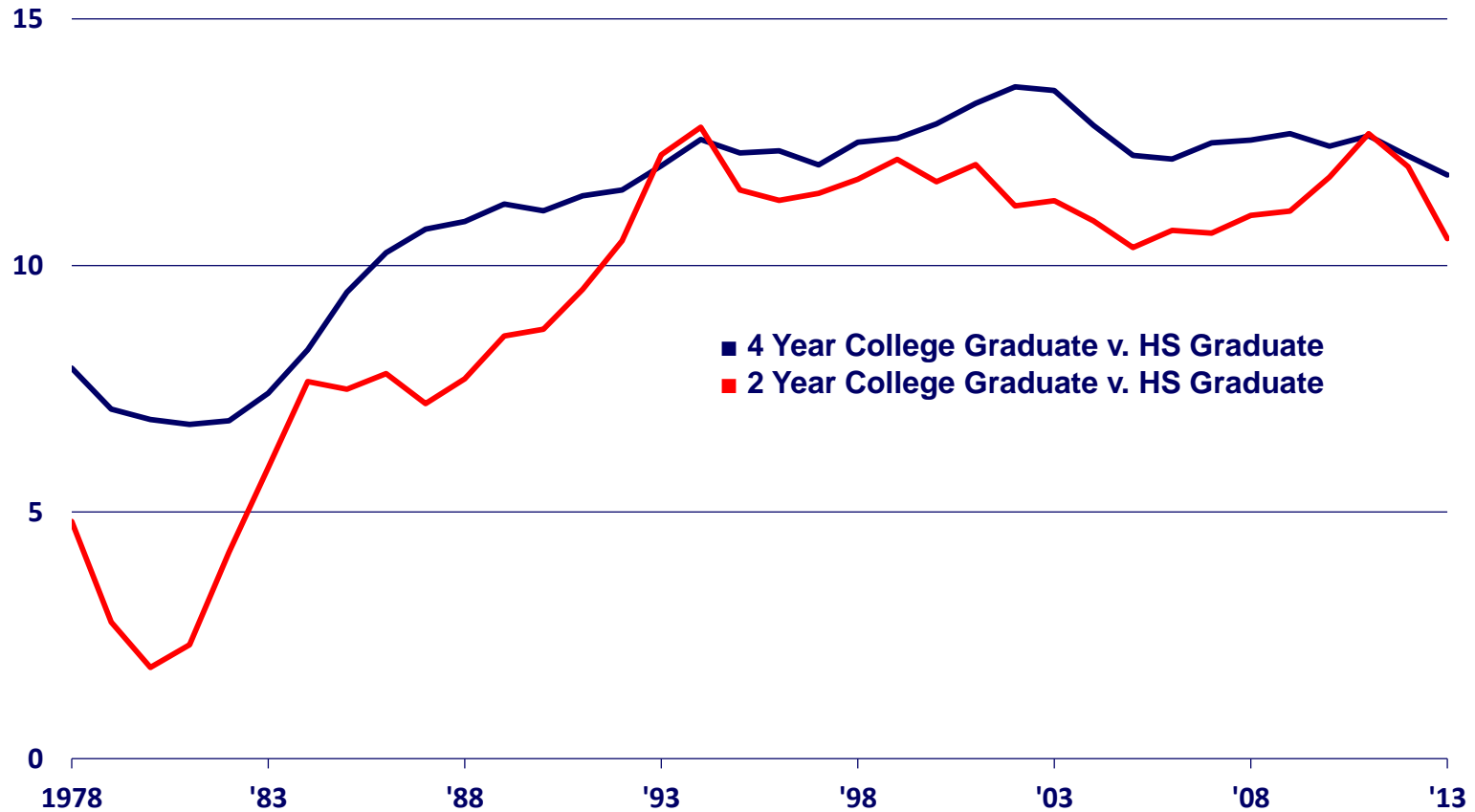


Source: Bureau of Labor Statistics based on October Current Population Survey Data

Education Is A Good Investment On Average

Internal Rate of Return to Higher Education

(percent)



Source: Lisa Barrow and Ofer Malamud, Chicago Fed and University of Chicago.

Returns To Vocational Education Also Attractive

- **E.g., Jacobson, LaLonde and Sullivan (2005): Old dogs can learn new tricks**
 - Retraining displaced workers can increase their earnings potential
 - Effects per credit comparable to degree programs
 - Returns vary by type of course – e.g., higher for health professions and other technical subjects
 - Returns better for workers with stronger high school backgrounds and/or some previous college experience
- **Usually a better investment for relatively young workers**
 - A longer period to recoup the investment

Helping Disadvantaged Youth More Difficult

- **Historically, there have been many disappointments**
 - Interventions are often too small to have a chance of offsetting disadvantages
 - Rigorous estimates of program impact are often indistinguishable from zero

- **Recently, some more hopeful outcomes**
 - E.g., career academies
 - Professors Barnow and Lerman will discuss additional successful approaches

Industry and Occupation Employment Projections

■ From the Bureau of Labor Statistics

- At state-industry and state-occupation level through 2022
- Not an easy task – expect surprises

■ Industries that are expected to grow fastest in both the U.S. and Wisconsin: construction, education and health, and business and professional services

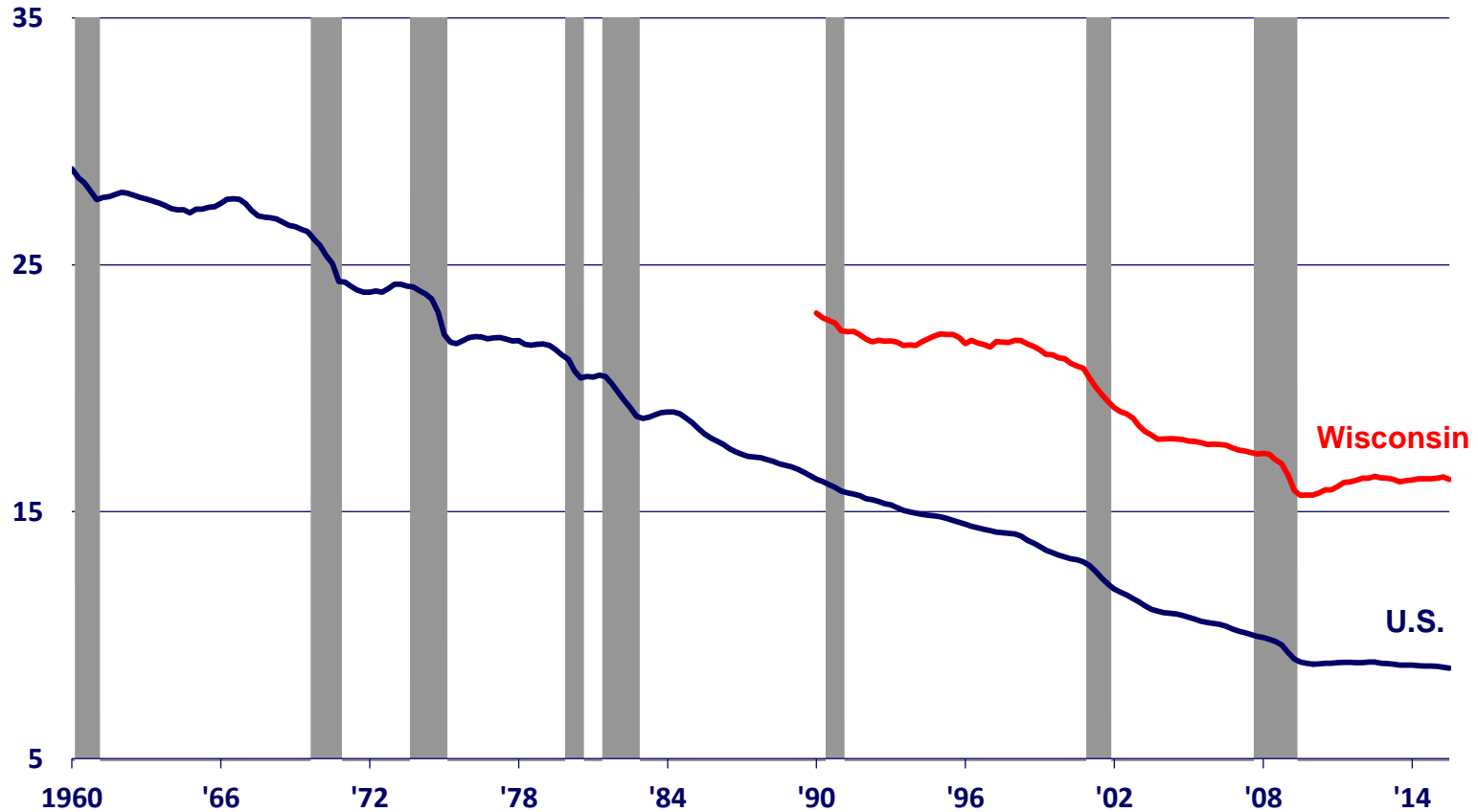
- Industries that are projected to grow faster in Wisconsin than the U.S. are: manufacturing and natural resources

■ Occupations that are expected to grow fastest in the U.S: healthcare, personal care, construction, computer and math, community and social services, business and finance, and building maintenance

- Occupations that are projected to grow faster in Wisconsin than the U.S. are: legal, production, and management

Has The Share in Manufacturing Stabilized?

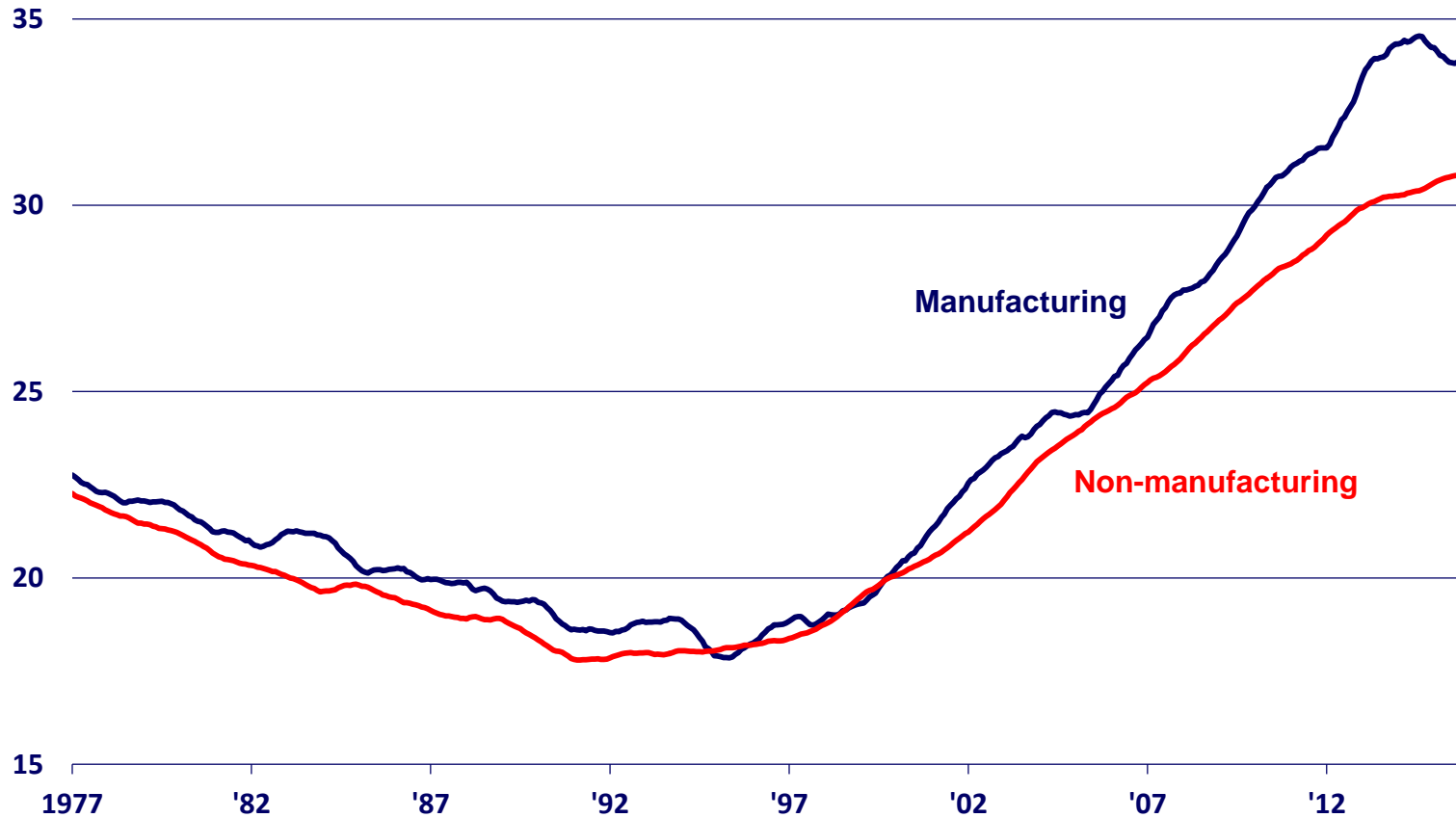
Share of Employment in Manufacturing
(percent)



Source: Current Employment Statistics Survey, Bureau of Labor Statistics accessed via Haver Analytics.

Manufacturing Workforce Older

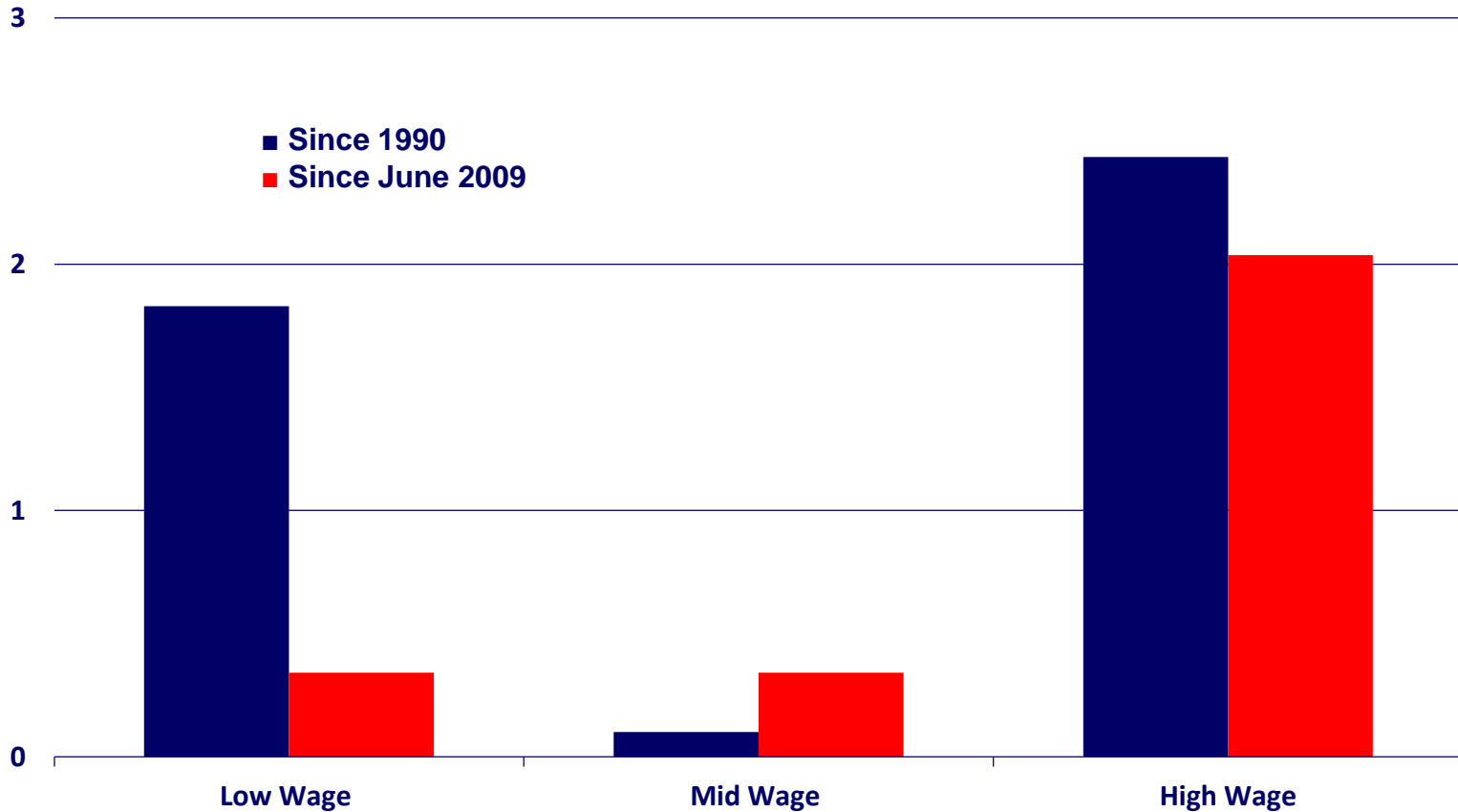
Share of Workers over 50
(percent)



Source: Chicago Fed Staff tabulations of Current Population Survey Data

Job Growth Slow in Middle-Wage Occupations

Annualized Job Growth of Occupations Ranked by Wage Rate
(percent)



Source: Bureau of Labor Statistics, Current Population Survey

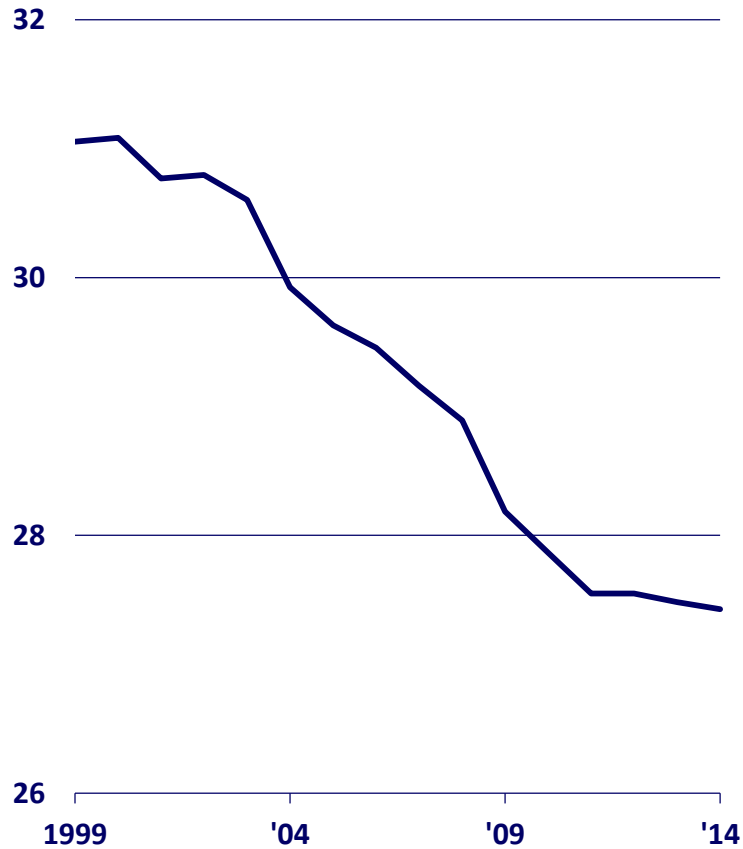
Note: Low wage includes service occupations and farming, fishing and forestry occupations

Mid wage includes sales and office occupations, construction and extraction occupations, installation, maintenance, and repair occupations, and transportation and material-moving occupations

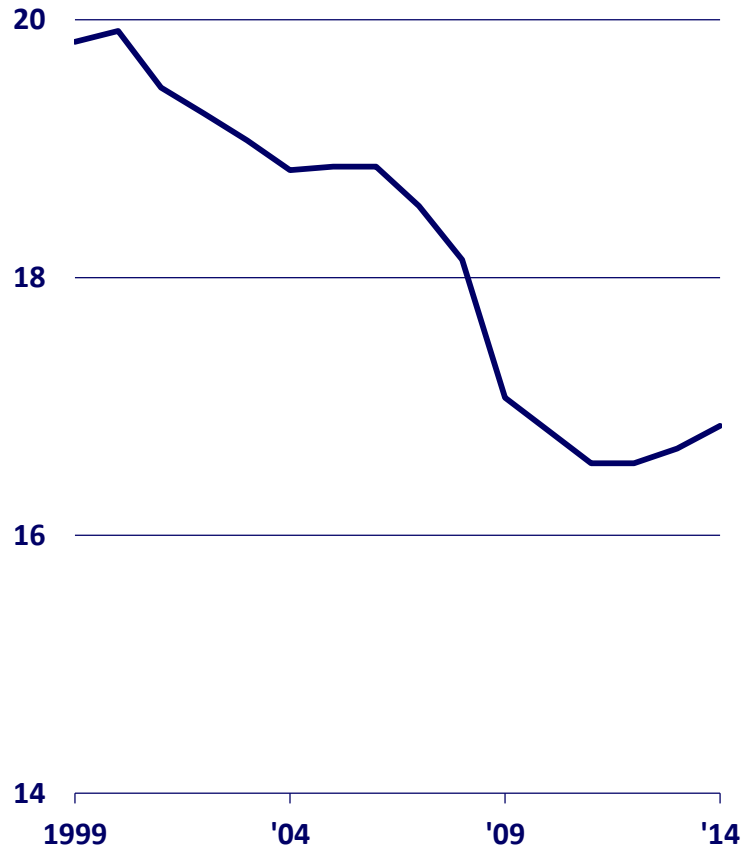
High wage includes professional and managerial occupations

Routine Jobs Are Declining

Cognitively Routine Jobs
(percent of total US employment)



Manually Routine Jobs
(percent of total US employment)



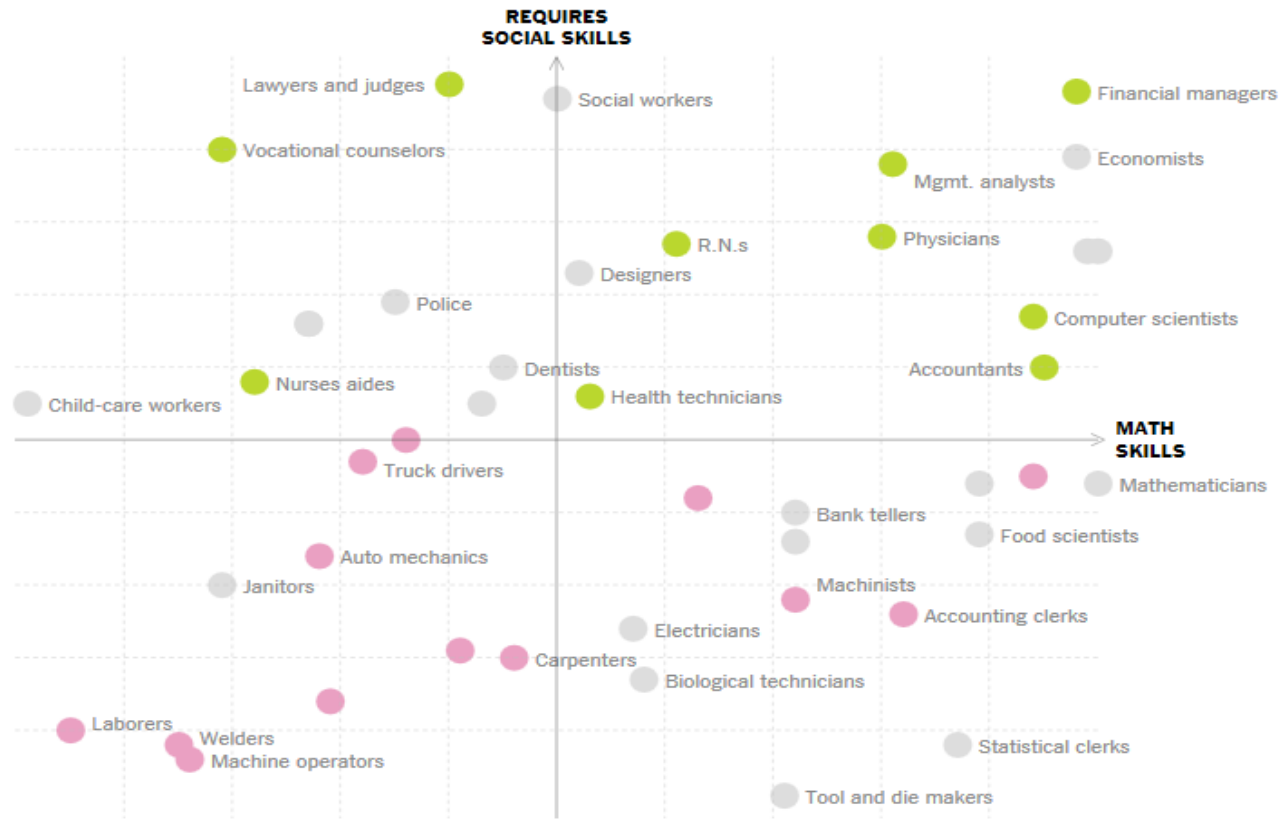
Source: From Bureau of Labor Statistics Occupational Employment Survey data, computed by Dan Aaronson and Brian Phelan, Chicago Fed and DePaul.

High Demand Jobs Require Math And Social Skills

Math and Science Are Not Enough

The jobs that have grown most consistently in the last two decades have been those that require high math skills and high social skills.

KEY: Change in share of jobs, 1980 to 2012 ● Fell ● About the same ● Grew



Source: David Deming, Harvard University

Source: "Why What You Learned in Preschool is Crucial at Work." *New York Times*, October 17, 2015 on David Deming. http://www.nytimes.com/2015/10/18/upshot/how-the-modern-workplace-has-become-more-like-preschool.html?_r=1

Summary

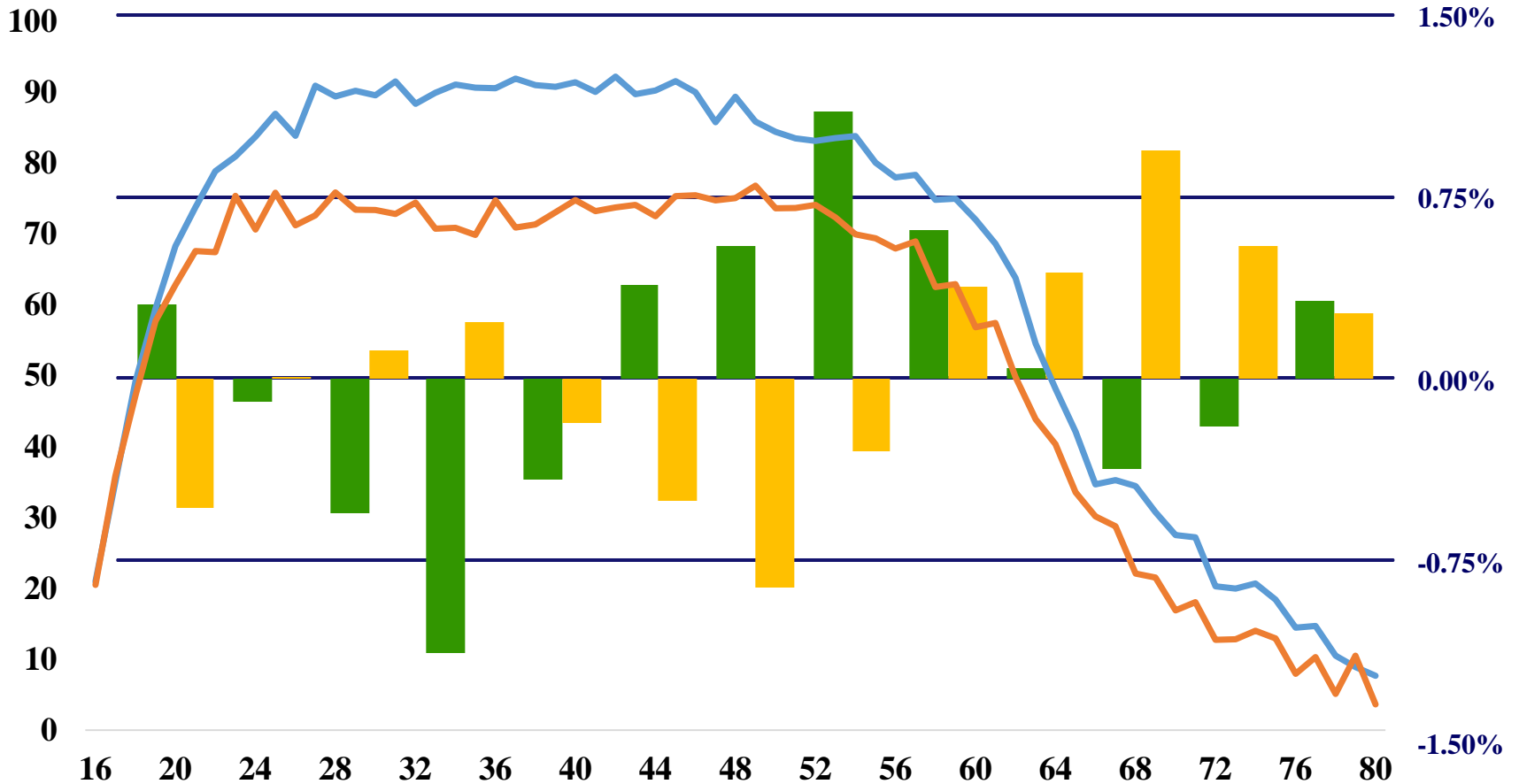
- **The future workforce will**
 - Grow more slowly
 - Be older and better educated
- **Particular industrial and occupational growth rates will likely extend previous trends**
 - But there is a lot of uncertainty
- **A firmer expectation is that skills – both technical and social – will continue to be in high demand**
 - Occupations that can be automated or outsourced to lower-wage countries will likely shrink
 - Highly routine jobs with little need for social interaction will be most vulnerable

Appendix

Participation And Population Change By Age

2013 Labor Force Participation Rates
 (percent, left axis)
 Men **Women**

Change in Population Share
 (percentage points, right axis)
 1995-2000 **2010-2015**



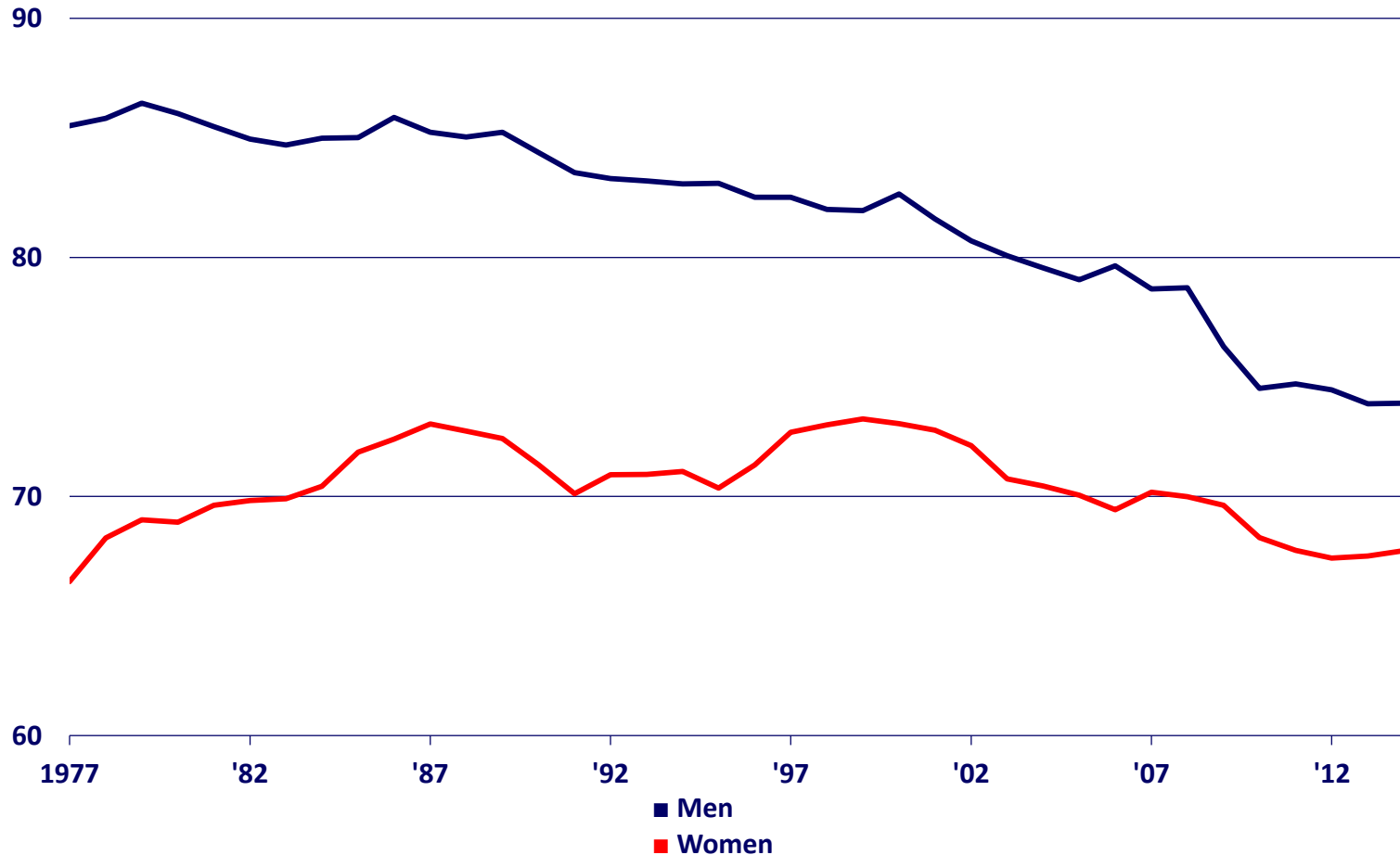
Teen LFP Has Fallen Massively

Ages 16-19
(percent)



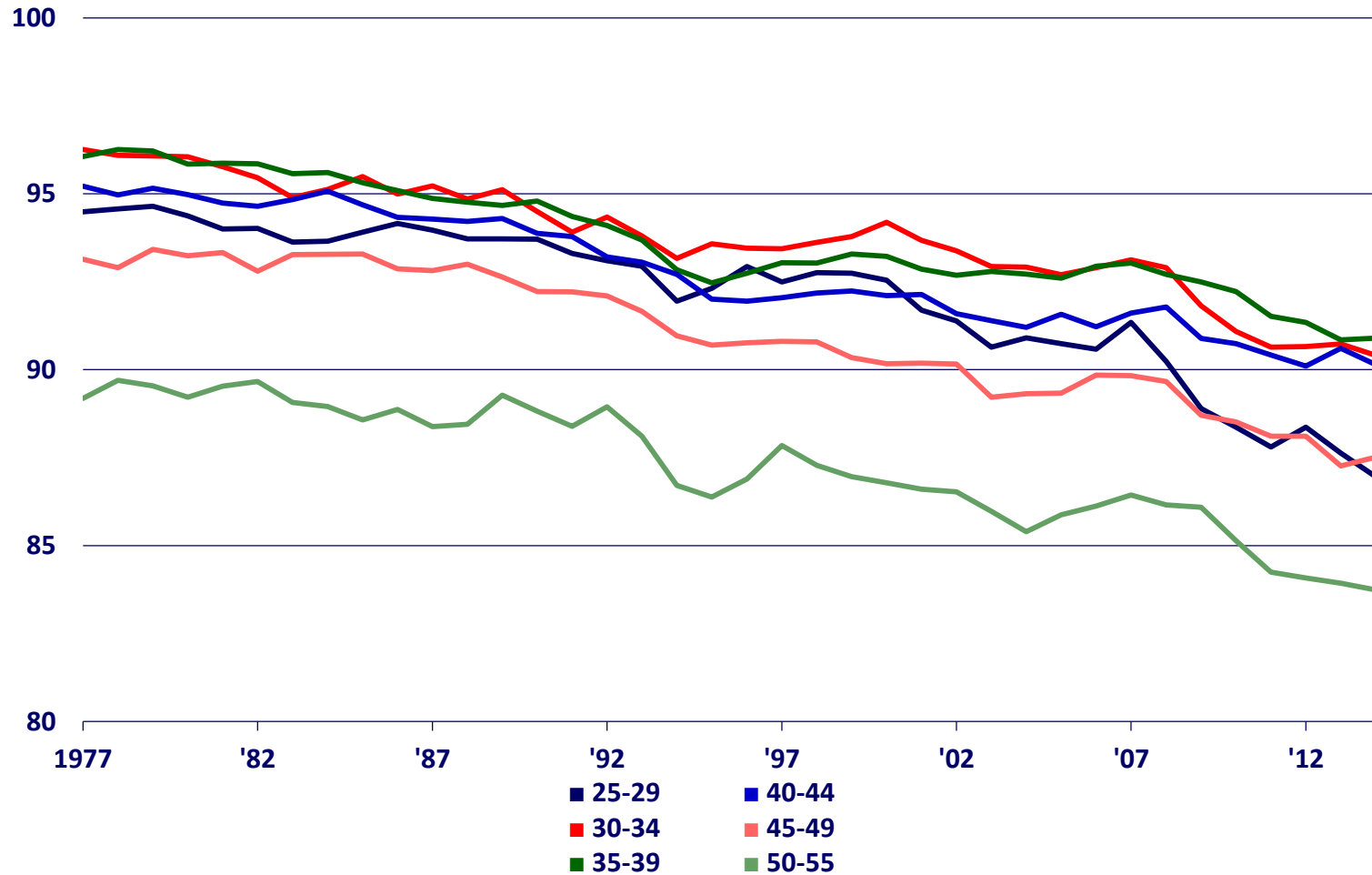
Early 20s LFP Also Down A Good Deal

Ages 20-24
(percent)



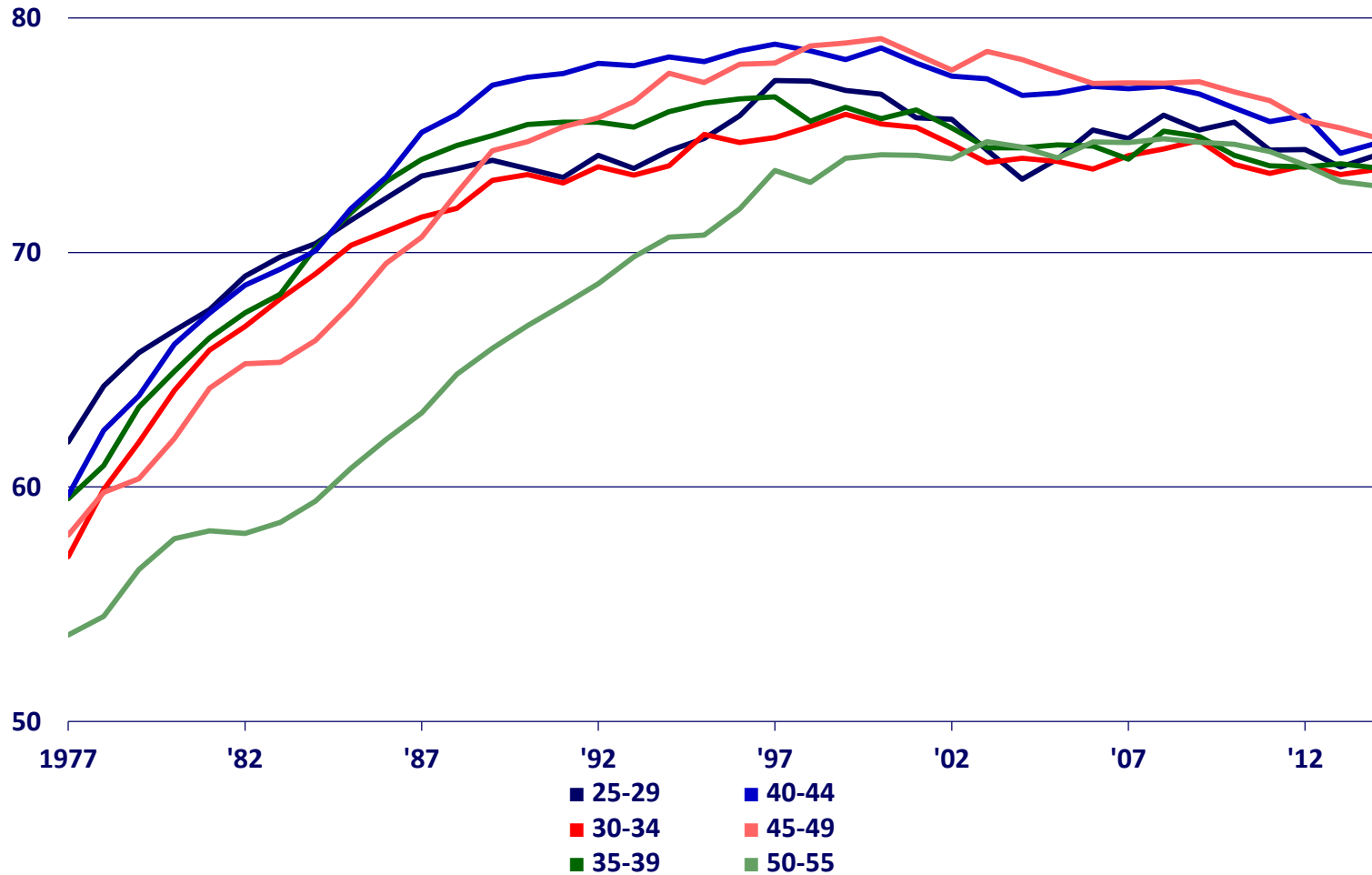
Prime Age Male LFP Steadily Down

Men, 25-54
(percent)



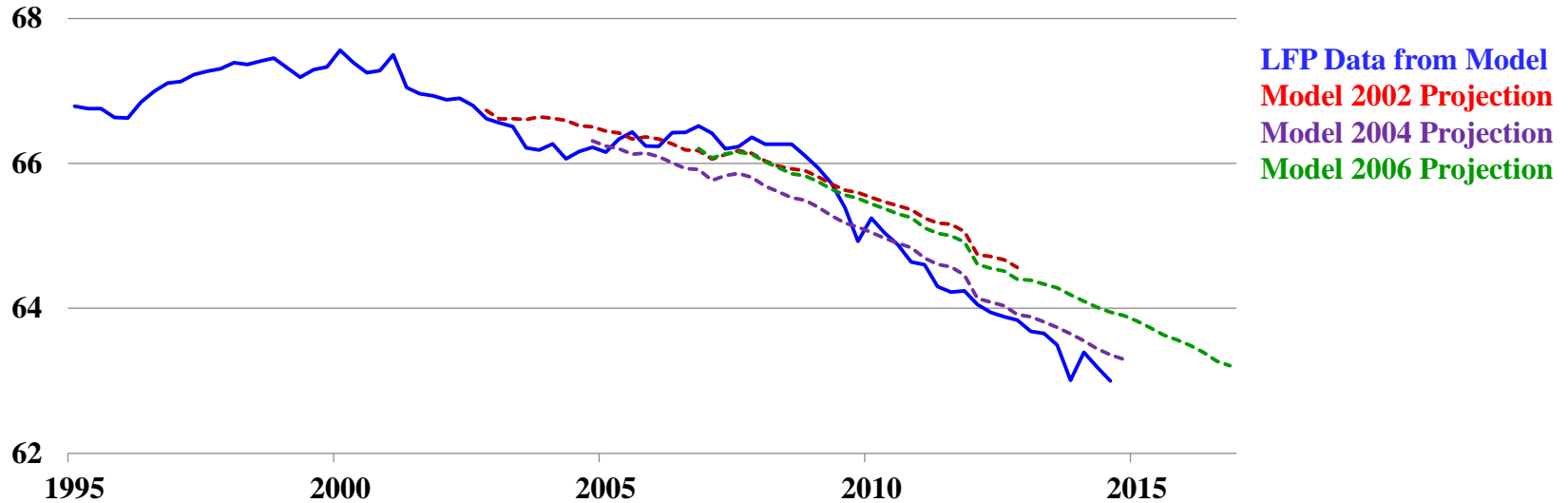
Prime Age Female LFP Now Slowly Down

Women, 25-54
(percent)

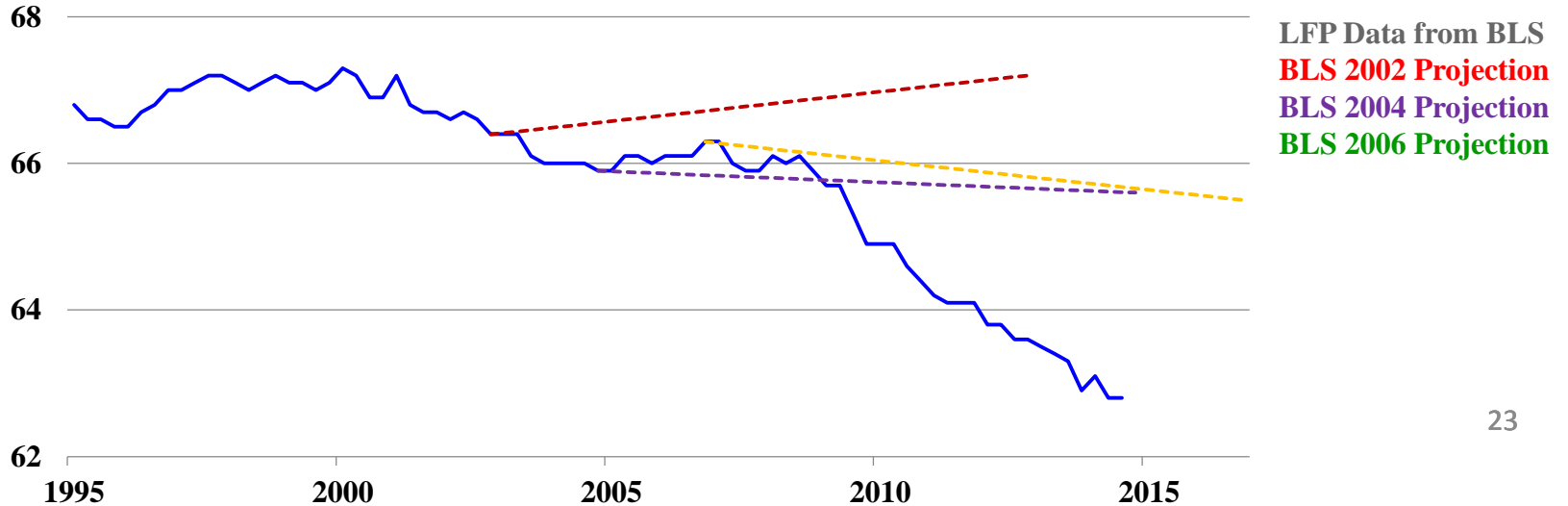


Comparison to BLS Projections

Model data and projections



BLS data and projections



Industry Employment Projections to 2022

	% Difference in wages*	U.S. Employment % Change	WI 2012	WI Change	WI % Change
Total		10.7	3,051,328	217,845	7.1
Goods	17.5	6.5	653,231	24,583	3.8
Natural Resources	16.3	-10.6	106,414	-1,694	-1.6
Construction	7.3	28.7	93,197	17,113	18.4
Manufacturing	22.8	-4.6	453,620	9,164	2.0
Service	-3.7	12.2	2,244,265	185,817	8.3
Trade, Transportation, & Utilities	-16.1	7.2	525,447	22,801	4.3
Information	77.2	-2.4	46,313	565	1.2
Financial	66.3	9.6	162,632	15,922	9.8
Professional & Business Services	30.0	19.4	289,552	42,089	14.5
Education & Health	-10.3	27.9	637,625	70,748	11.1
Leisure	-59.0	9.3	255,858	70,748	9.2
Other Services	-33.8	10.5	146,986	7,362	5.0
Government	N/A	2.3	179,852	2,688	1.5

* Percent difference in Industry Average Weekly Wage (2014) vs U.S. Average Weekly Wage for all Industries

Occupation Employment Projections to 2022

	% Difference in wages*	U.S. Employment % Change	WI 2012	WI Change	WI % Change
Total		10.7	3,051,328	217,845	7.1
Management	138.2	7.2	144,717	12,130	8.4
Business & Finance	53.3	12.5	146,675	12,518	8.5
Computer & Math	77.8	18.0	65,526	7,648	11.7
Architecture & Engineering	72.6	7.3	49,017	2,093	4.3
Life, Physical, and Social Sciences	48.4	10.1	24,271	2,019	8.3
Community and Social Services	-4.1	17.2	35,929	2,377	6.6
Legal	114.1	10.7	15,176	2,447	16.1
Education	10.5	11.1	182,223	11,074	6.1
Arts, Design, Media, Sports	18.1	7.0	49,980	3,722	7.5

* Percent difference in 2014 Annual Mean Wage for Individual Occupations vs U.S. Mean Wage for All Occupations

Occupation Employment Projections to 2022

	% Difference in wages*	U.S. Employment % Change	WI 2012	WI Change	WI % Change
Healthcare	60.9	21.5	161,312	23,792	14.8
Healthcare support	-39.0	28.1	82,784	10,984	13.3
Protective Services	-6.9	7.9	54,884	2,499	4.6
Food prep	-53.5	9.4	232,533	18,298	7.9
Building maintenance	-44.2	12.5	102,621	12,852	12.5
Personal care	-47.1	20.9	150,668	19,305	12.8
Sales	-18.1	7.3	281,322	11,699	4.2
Office support	-25.3	6.8	444,947	20,468	4.6
Farming	-46.7	-3.4	84,896	-3,552	-4.2
Construction	-1.3	21.4	97,504	14,648	15.0
Install, repair	-4.3	9.6	108,958	7,703	7.1
Production	-24.9	0.8	314,215	9,924	3.2
Transport	-27.0	8.6	221,171	13,197	6.0

* Percent difference in WI 2014 Annual Mean Wage vs U.S. Mean Wage for all Occupations