A FAQ on tech, jobs, and wages

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What’s going on?
What’s going on?

The polarization or “hollowing out” of the workforce
Why Are There Still So Many Jobs? 
The History and Future of Workplace Automation

David H. Autor
Skill Percentile (ranked by occupation's 1979 mean log wage)

All US jobs in 1979

Lowest paid

Middle Class

Highest paid

http://economics.mit.edu/f
Smoothed Employment Changes, 1979-1989

“Market Share” of these jobs increased

“Market Share” of these jobs declined

Skill Percentile (ranked by occupation's 1979 mean log wage)
Smoothed Employment Changes, 1989-1999

Skill Percentile (ranked by occupation’s 1979 mean log wage)
Smoothed Employment Changes, 1999-2007

Skill Percentile (ranked by occupation’s 1979 mean log wage)
Smoothed Employment Changes, 2007-2012

Skill Percentile (ranked by occupation's 1979 mean log wage)
Is this a US-only phenomenon?
Is this a US-only phenomenon?

No
Change in Occupational Employment Shares in Low, Middle, and High-Wage Sectors in 16 EU Countries, 1993–2010

Source: Goos, Manning, and Salomons (2014)
Isn’t this mainly because of globalization / China?
Isn’t this mainly because of globalization / China?

No

Source: Federal Reserve Bank of St. Louis, Bureau of Economic Analysis

Manufacturing Value Added (old data series)
Manufacturing Value Added (new data series)
US Manufacturing Employment (Thousands of Persons)

Source: Federal Reserve Bank of St. Louis, Bureau of Economic Analysis
So what *is* the cause?
So what is the cause?

Automation of routine work
The adoption of computers substitutes for... workers performing routine tasks—such as bookkeeping, clerical work, and repetitive production and monitoring activities—which are readily computerized because they follow precise, well-defined procedures.”

Autor and Dorn, 2013
We evaluate numerous alternative explanations for the pronounced differences in wage and employment polarization... including deindustrialization, offshoring and growing low-skill immigration. None of these alternatives appears central to our findings.”

Autor and Dorn, 2013
Then why isn’t there mass unemployment?

Economic growth + Labor force flexibility + “downward mobility”
US Real GDP per Capita and Employment, 1947-2015

<table>
<thead>
<tr>
<th>OECD Measures of Labor Market Flexibility</th>
<th>U.S. Percentile Rank (100 = Most Flexible)</th>
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<tbody>
<tr>
<td>Barriers to Entrepreneurship</td>
<td>62</td>
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<tr>
<td>Labor Taxation</td>
<td>71</td>
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<tr>
<td>Average of Collective Bargaining Agreements</td>
<td>90</td>
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<tr>
<td>Minimum Cost of Labor</td>
<td>92</td>
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<td>Scope of State Intervention</td>
<td>94</td>
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<tr>
<td>Employment Protection for Regular Employment</td>
<td>100</td>
</tr>
<tr>
<td>Overall Labor Market Regulation</td>
<td>100</td>
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</tbody>
</table>

Source: OECD 2015; CEA calculations.
Smoothed Employment Changes, 2007-2012

Employment moves from here...

...to here

Skill Percentile (ranked by occupation’s 1979 mean log wage)
Then why isn’t there mass unemployment?

Also, there is concentrated high unemployment.
Figure 1: Prime-Age Male Labor Force Participation Rate


Figure 9: Prime-Age Male Labor Force Participation by Educational Attainment


What are the consequences?
What are the consequences?

Hard to say, precisely. Here are a few other things that are going on...
Mortality

http://www.hamiltonproject.org/blog/the_changing_landscape_of_american_life_expectancy
Mortality

**FIGURE 5A.**
Mortality by Cause, White Non-Hispanics Age 45–54

- Lung Cancer
- Poisoning
- Suicide
- Chronic Liver disease
- Diabetes

Deaths per 100,000


Note: Figure is adapted from Case and Deaton (2015) figure 2. Chronic liver diseases include alcoholic liver diseases and cirrhosis. Poisonings include drug and alcohol poisoning, both accidental and with undetermined intent.

http://www.hamiltonproject.org/blog/the Changing Landscape of American Life Expectancy
Overdoses now leading cause of death of Americans under 50

CLEVELAND, Ohio -- Overdoses are now the leading cause of death of Americans under the age of 50.

According to preliminary data compiled by The New York Times, deaths likely topped 59,000 -- 19 percent more than the year before.

In Ohio, they were up even more.

On May 26, Cleveland Police Sgt. Timothy Maffo-Judd's body camera caught as he approached a man slumped in his car. It turned out that the man had minutes from a fatal drug overdose.

Three applications of Narcan -- the anti-overdose drug -- and the victim started coming around.

Maffo-Judd says it's become a grim routine, and he's even encountered the same person twice. "That's pretty common," he says.
Social Decay

FIGURE 8.11. PERCENTAGE OF CHILDREN LIVING WITH BOTH BIOLOGICAL PARENTS WHEN THE MOTHER WAS AGE 40
Social Decay

**FIGURE 10.2. WHITE PRISONERS**

![Graph showing the increase in prisoners per 100,000 population from 1960 to 2010 for different categories: Belmont, Fishtown, Top 20%, and Bottom 30%.]
“The Politics of Resentment”
McAfee's caution:

"If current trends continue, the people will rise up before the machines do."
Are things going to get better?
Are things going to get better?

Two views here:
1) YES. We’re underestimating the power of capitalism. History will repeat itself.
Are things going to get better?

Two views here:

2) NO. We’re underestimating the power of modern technology. This time is different.
What should we do?
What should we do?

Depends on who you talk to.
Economists

Technologists

Politicians

Trade war

Income tax ↓

Minimum Wage ↑

Ed. reform

Reg. reform

Immigration ↑

Infrastructure ↑

EITC ↑

Basic Income

Income

Trade war
Thank you!

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