



U.S. Wage Puzzles: False Trails, Clues and Answers

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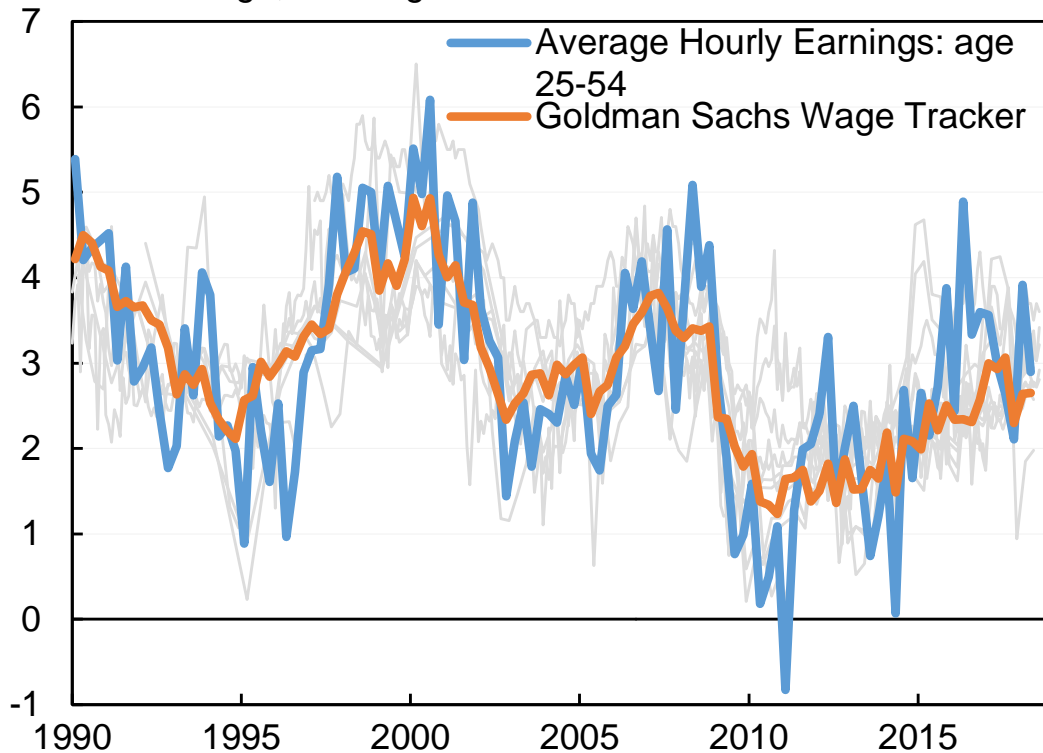
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Many measures of wage growth, but a (generally) consistent trend



Nominal Wage Growth

Percent Change, Year Ago



Many different measures of wage growth show varying numbers due to different concepts or statistical noise.

My focus will mostly be on average hourly earnings for workers age 25-54.

Other wage measures: Atlanta Fed wage growth tracker, ECI: wages and salaries of civilian workers, ECEC: wages and salaries of private industry workers, ECI: wages and salaries of production and nonsupervisory workers, ECEC: wages and salaries of private industry workers, median usual weekly earnings, average hourly earnings: total private, average hourly earnings: production and nonsupervisory workers, average weekly earnings: total private, average weekly earnings: production and nonsupervisory workers.

Source: Bureau of Labor Statistics; Current Population Survey, Merged Outgoing Rotation Groups; IPUMS CPS; Goldman Sachs; Federal Reserve Bank of Atlanta; Haver Analytics; author's calculations.

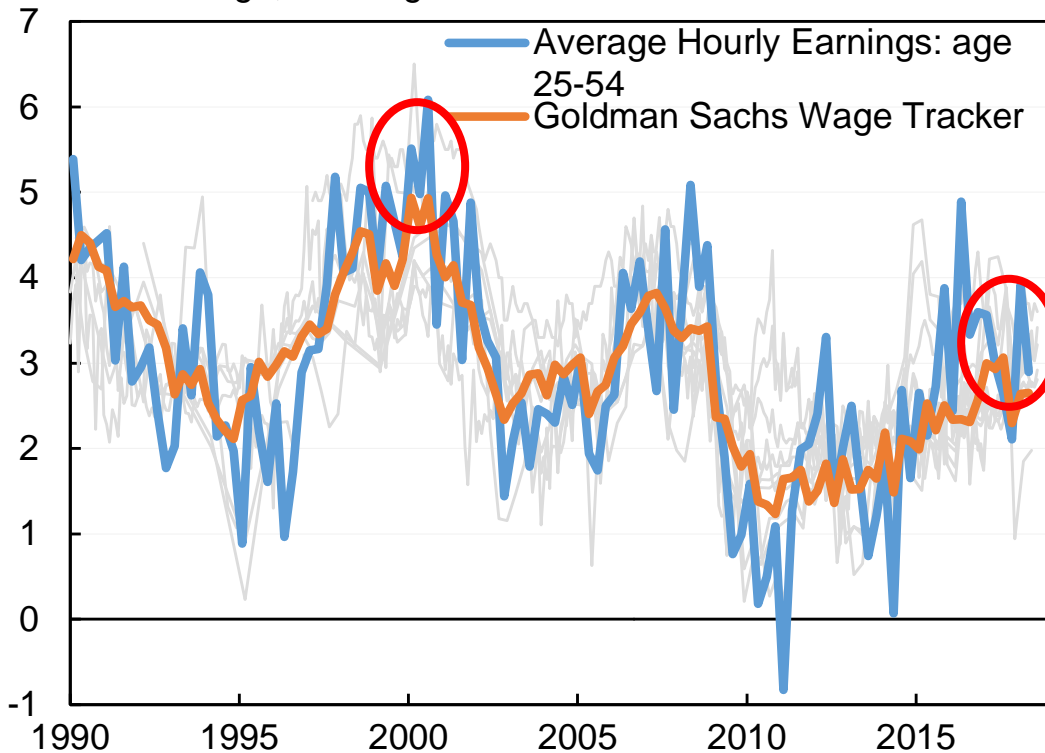
WAGE PUZZLE #1



Why is wage growth slower today than in the late 1990s?

Nominal Wage Growth

Percent Change, Year Ago



Annual growth in average hourly earnings for age 25-54:

1998:Q1-2001:Q1: 4.8%

2015:Q2-2018:Q2: 3.6%

Nominal wage growth is 1.2 percentage point slower now than in the late 1990s.

Other wage measures: Atlanta Fed wage growth tracker, ECI: wages and salaries of civilian workers, ECEC: wages and salaries of private industry workers, ECI: wages and salaries of production and nonsupervisory workers, ECEC: wages and salaries of private industry workers, median usual weekly earnings, average hourly earnings: total private, average hourly earnings: production and nonsupervisory workers, average weekly earnings: total private, average weekly earnings: production and nonsupervisory workers.

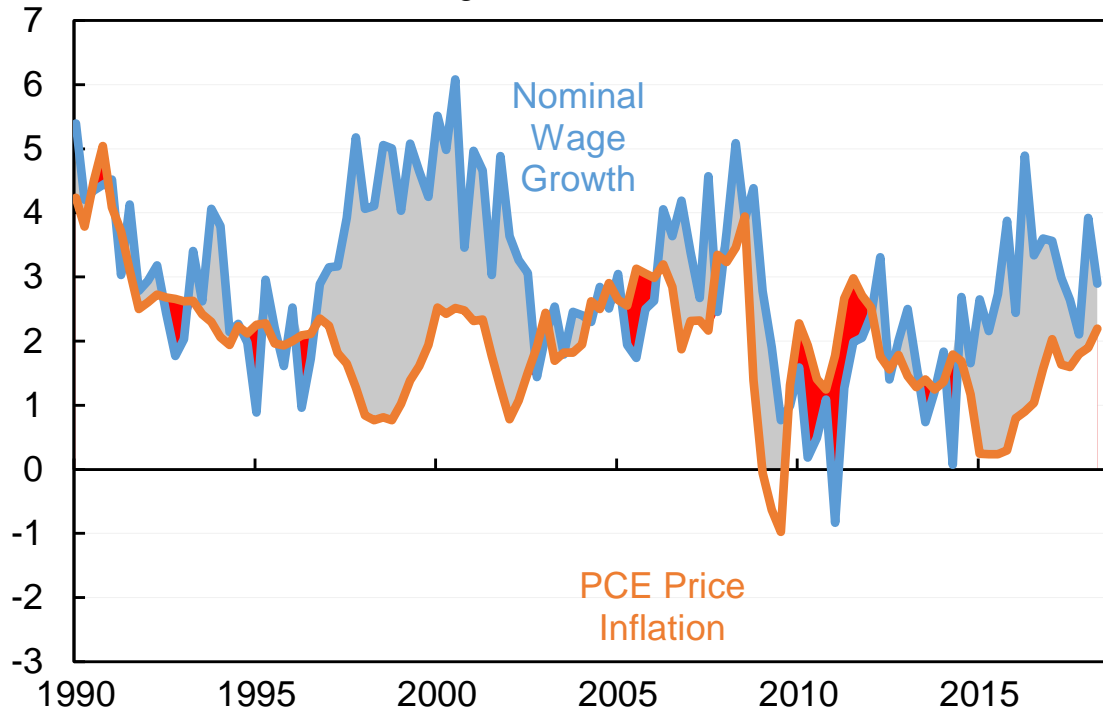
Source: Bureau of Labor Statistics; Current Population Survey, Merged Outgoing Rotation Groups; IPUMS CPS; Goldman Sachs; Federal Reserve Bank of Atlanta; Haver Analytics; author's calculations.

Hypothesis 1: Inflation



A temporary *increase* in inflation due to oil prices explains much of this year's slowdown

**Average Hourly Earnings Growth,
Prime-age (age 25-54) Wage and Salary Workers**
Four-Quarter Percent Change



Recent nominal wage growth has largely been undone by rising inflation, but that is likely to be a temporary phenomenon assuming oil prices stabilize and/or fall.

Note: Shaded area represents real wage growth. Red shading indicates that real wage growth was negative.

Source: Bureau of Labor Statistics; Current Population Survey, Merged Outgoing Rotation Groups; IPUMS CPS; Bureau of Economic Analysis; Haver Analytics; author's calculations.

Hypothesis 1: Inflation



Lower trend inflation explains part of the slower growth of nominal wages

Real Average Hourly Earnings Growth, Prime-age (age 25-54) Wage and Salary Workers

Percent Change, Trailing Three-Year Average (Annual Rate)



Instead of a 1.2 p.p. slowdown in nominal wages relative to the late 1990s, we only need to explain a 0.8 p.p. slowdown in real wages.

Note: Nominal wages are deflated by PCE price inflation.

Source: Bureau of Labor Statistics; Current Population Survey, Merged Outgoing Rotation Groups; IPUMS CPS; Bureau of Economic Analysis; Haver Analytics; author's calculations.

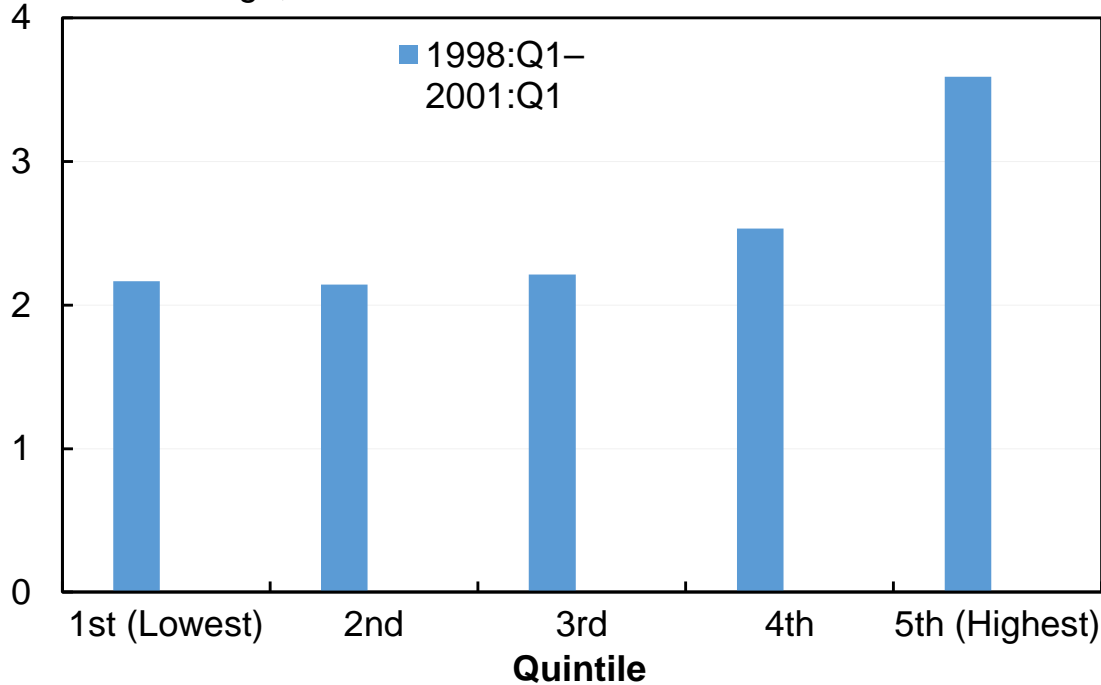
Hypothesis 2: Inequality

Does not explain the slower wage growth than
in the late 1990s



Real Average Hourly Earnings Growth by Quintile, Prime-age (age 25-54) Wage and Salary Workers

Percent Change, Annual Rate



Note: Top-coded earnings are adjusted following Lemieux (2006). Excludes observations with hourly earnings below \$0.50 or above \$100 in 1989 dollars as deflated by the CPI-U-RS. Nominal wages are deflated by PCE price inflation.

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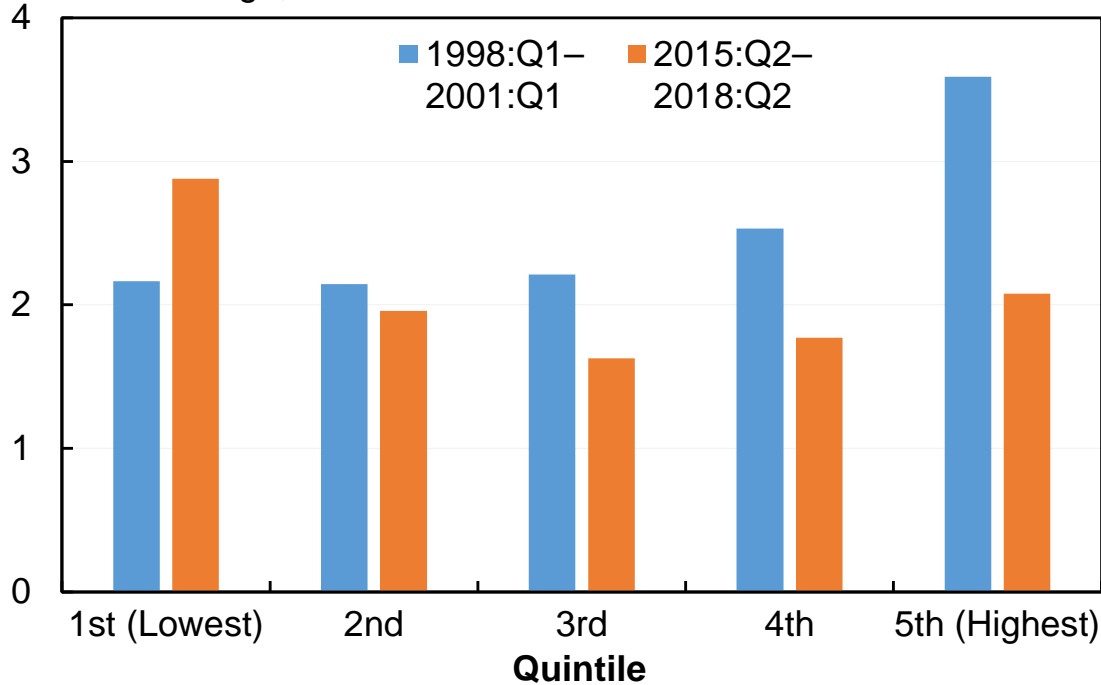
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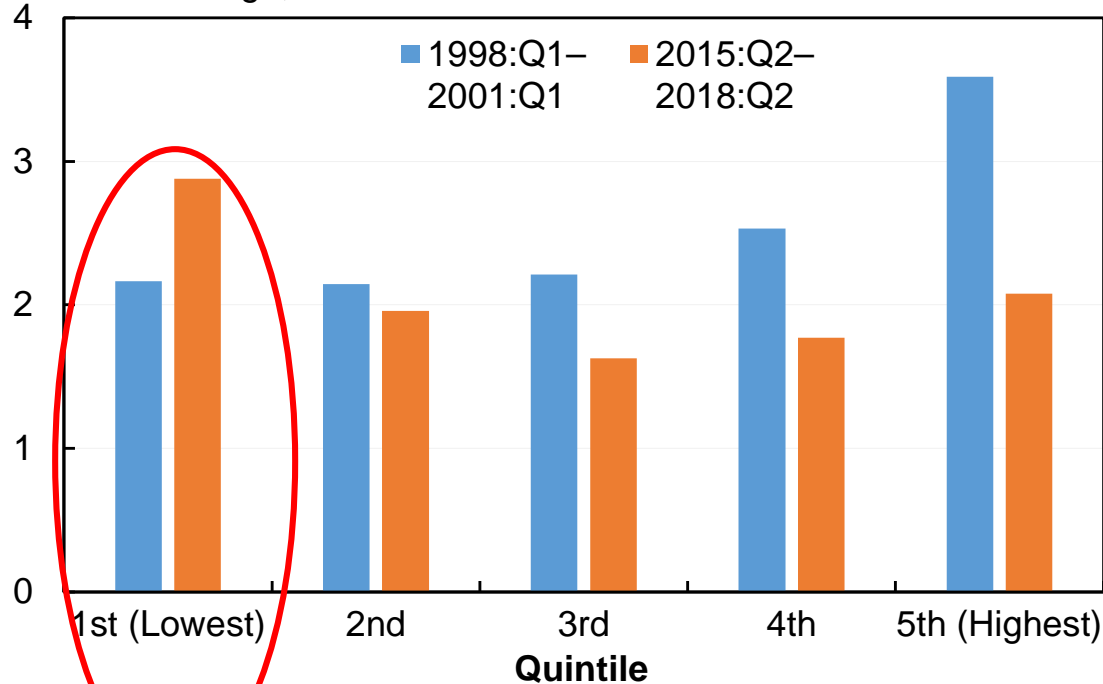
Hypothesis 2: Inequality

Does not explain the slower wage growth than
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Real Average Hourly Earnings Growth by Quintile, Prime-age (age 25-54) Wage and Salary Workers

Percent Change, Annual Rate



In the latest period wage growth at the bottom is higher than in the late 1990s and is higher than it has been at the top recently.

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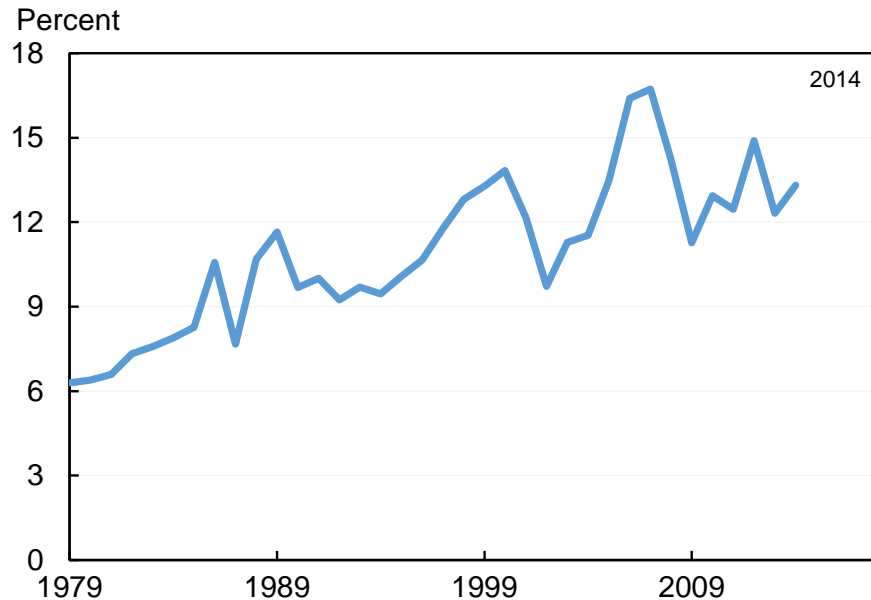
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Hypothesis 2: Inequality

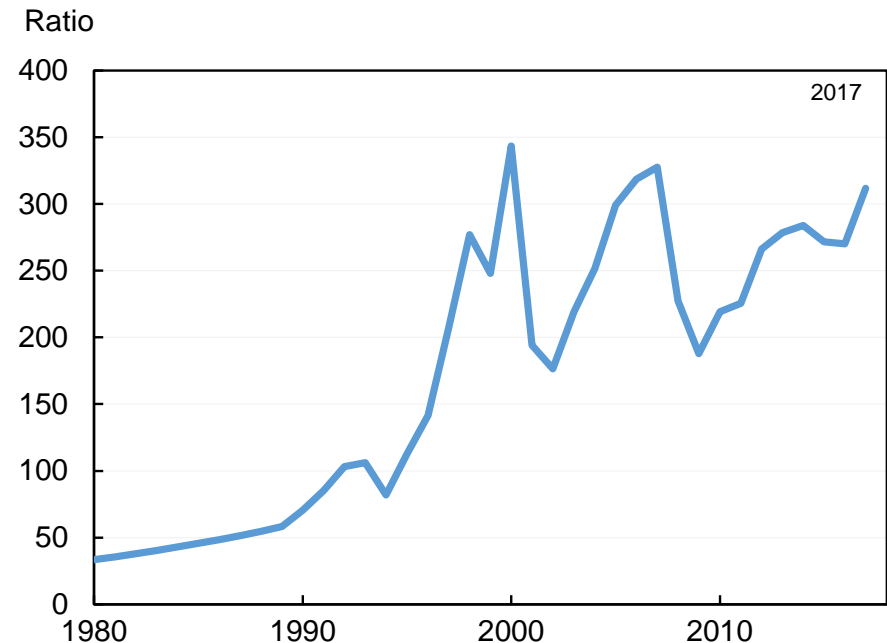
Inequality was rising more rapidly in the 1980s and 1990s than it has recently



**Top 1% Share of After-tax Income,
Non-elderly-headed Households**



CEO-to-Worker Compensation Ratio



Hypothesis 3: Slack



Many measures of slack are lower today than in the late 1990s—except employment rates

Measures of Labor Marketed Slack

	2001:Q1	2018:Q2	Change
Short-term Unemployment Rate	3.7	3.1	-0.7
Unemployment Rate	4.2	3.9	-0.3
U5.5	6.2	6.2	0.1
Prime-age (25-54) Nonemployment Rate	18.7	20.8	2.1

Labor markets are tighter now according to some measures, but not others.

Note: U5.5 is the number of unemployed, plus the number marginally attached to the labor force, plus 0.5 times the number working part-time for economic reasons as a share of the sum of the labor force and the number marginally attached to the labor force.

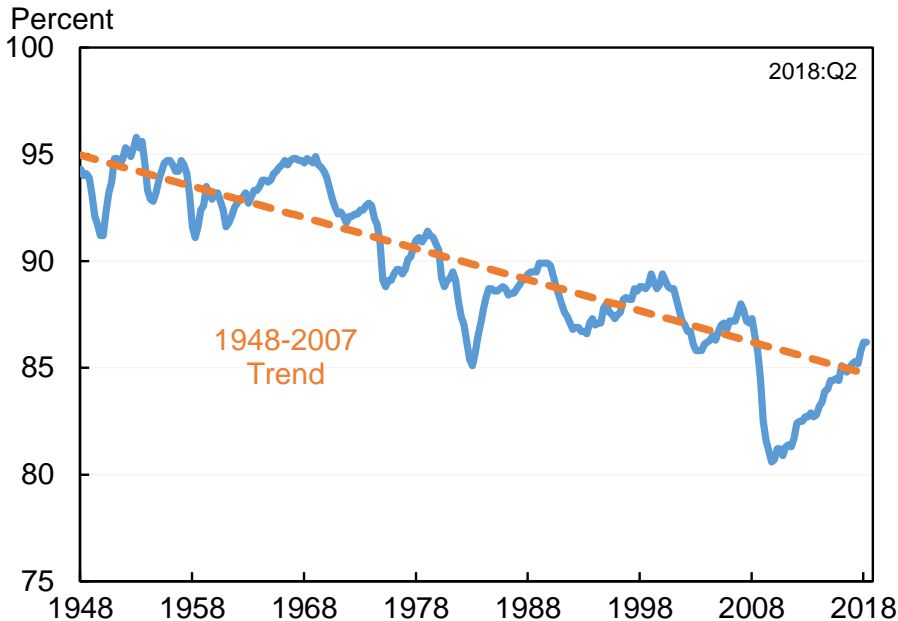
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Hypothesis 3: Slack

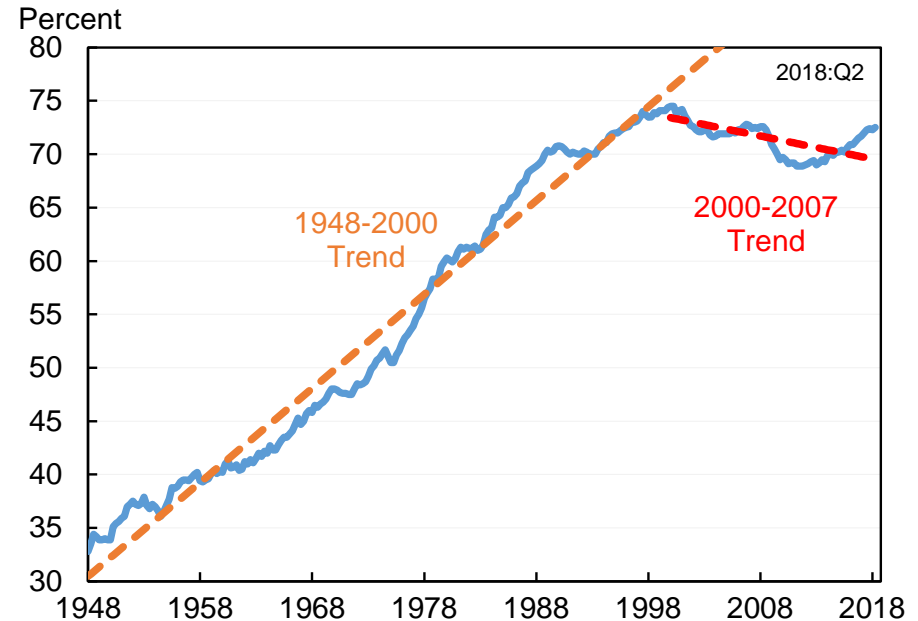
Employment rates have major trends unrelated to the business cycle



Prime-age (age 25-54) Male Employment-Population Ratio



Prime-age (age 25-54) Female Employment-Population Ratio

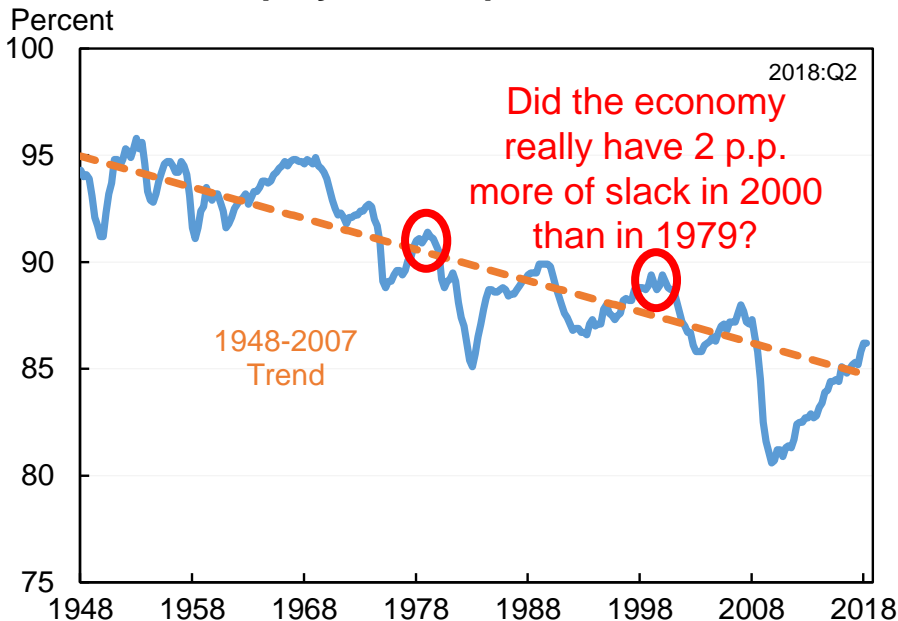


Hypothesis 3: Slack

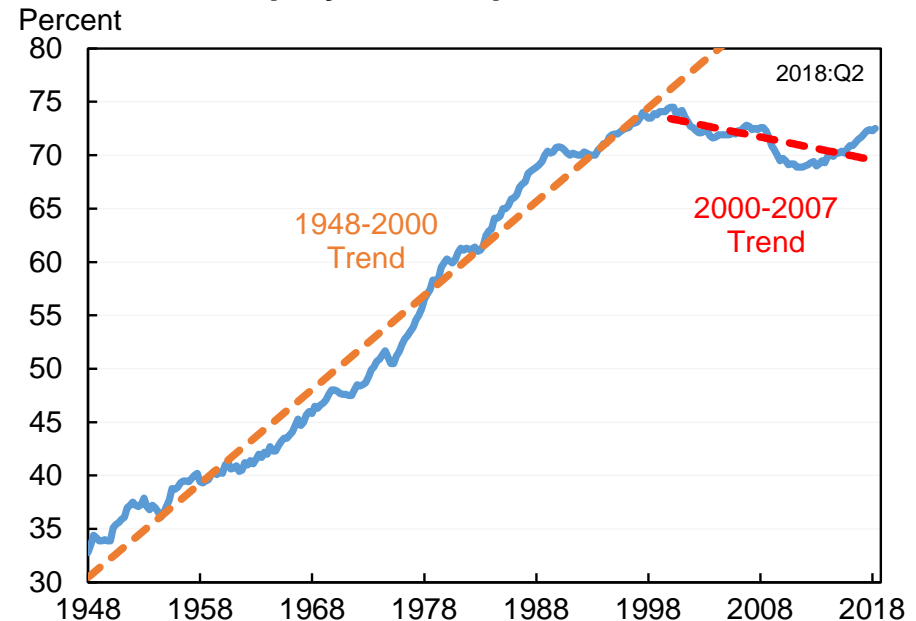
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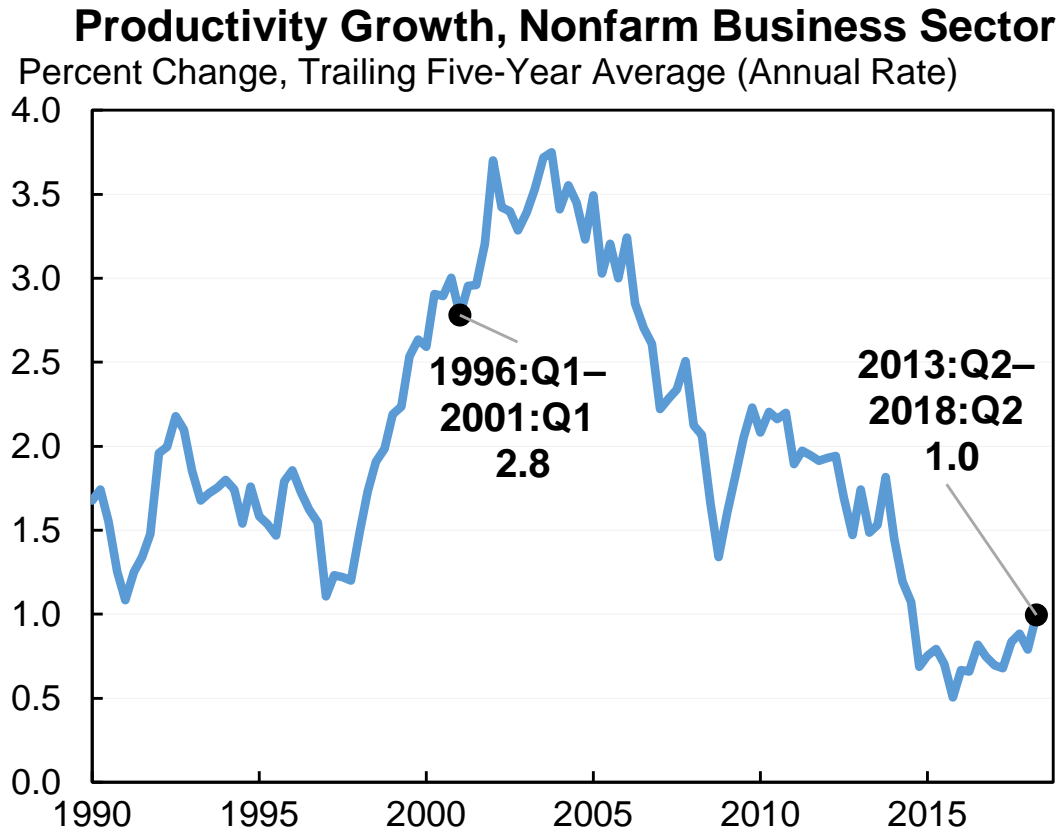


Prime-age (age 25-54) Female Employment-Population Ratio



Hypothesis 4: Productivity growth

Productivity slowdown more than explains the difference



With lower productivity growth, we would expect wage growth to be lower—by as much as 1.8 percentage points.

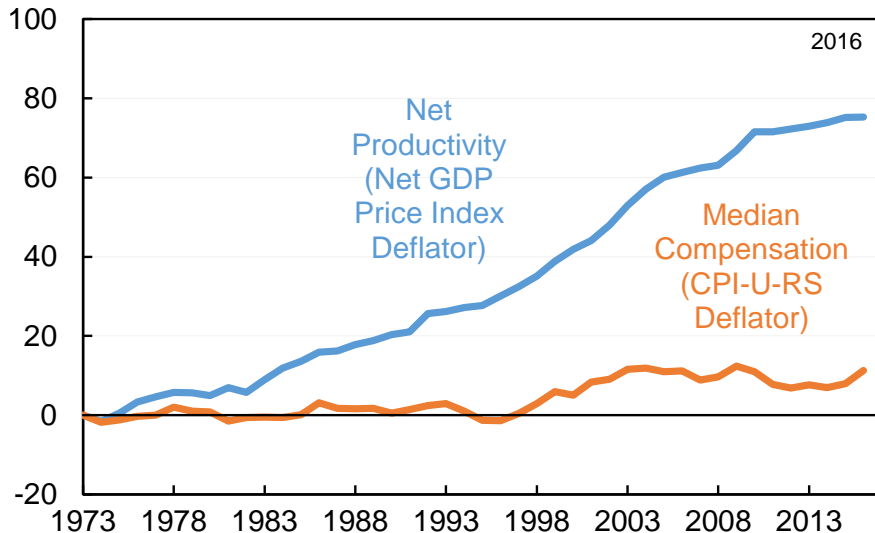


Hypothesis 4: Productivity growth

Macro and micro evidence both find productivity growth is tied to wage growth

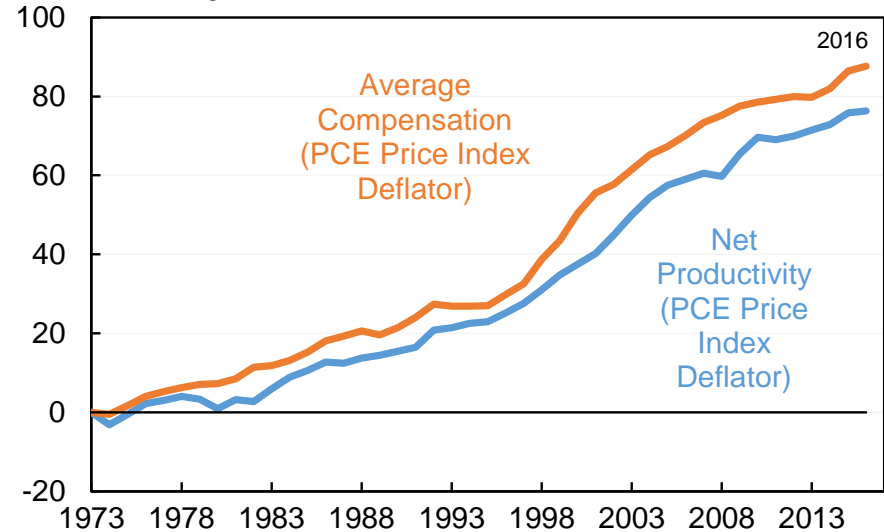
Productivity Growth vs. Median Compensation Growth

Percent Change Since 1973



Productivity Growth vs. Average Compensation Growth

Percent Change Since 1973



Mean compensation very closely tied to mean productivity growth if you use the same deflators/concepts for both. (Note—median still disconnected from mean, a distinct issue that has not been the important factor in the recent data.)

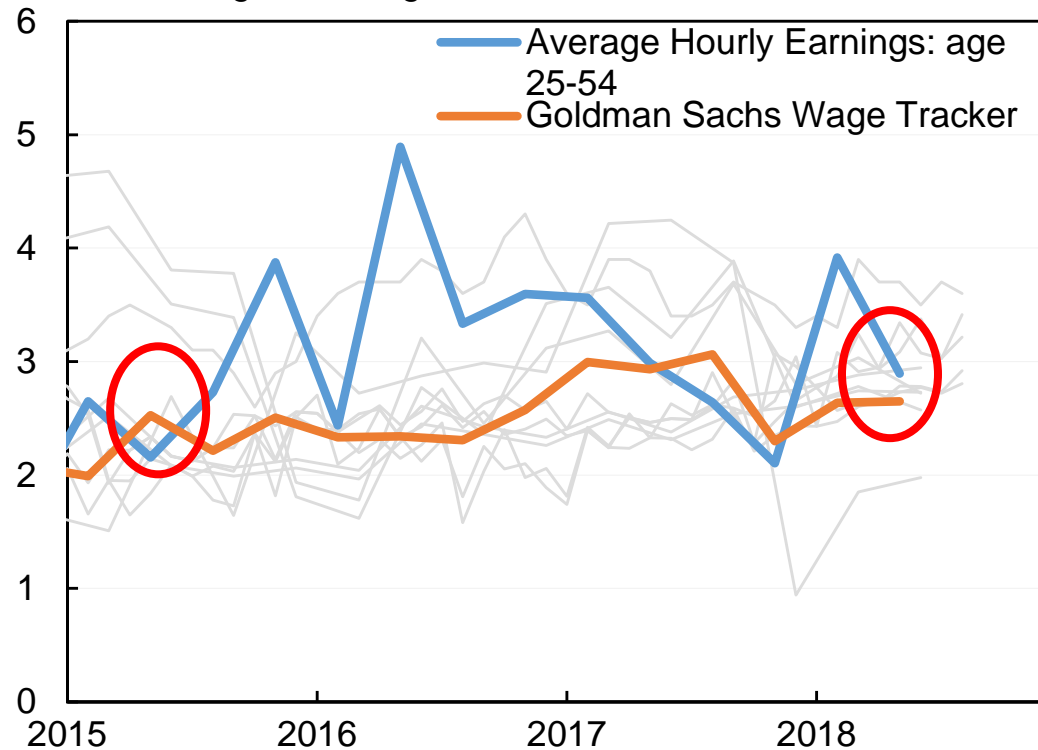
WAGE PUZZLE #2



Why hasn't wage growth picked up more in the last few years?

Nominal Wage Growth

Percent Change, Year Ago



Measures of nominal wage growth are only slightly faster over the previous year than they were three years ago

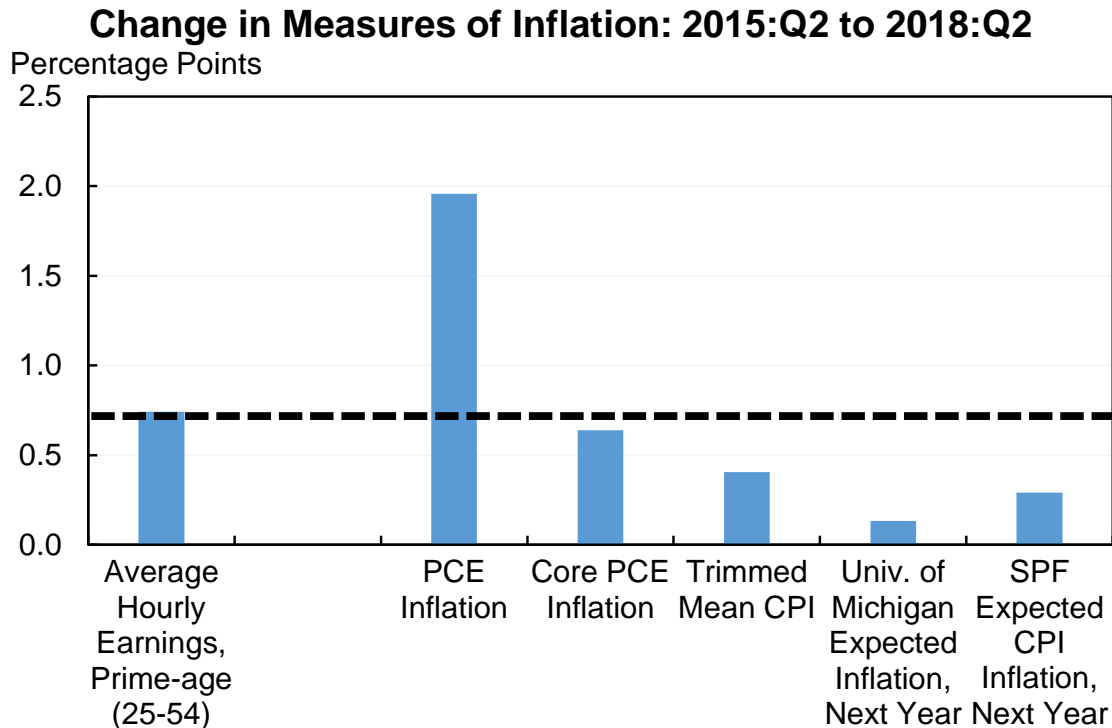
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Source: Bureau of Labor Statistics; Current Population Survey, Merged Outgoing Rotation Groups; IPUMS CPS; Goldman Sachs; Federal Reserve Bank of Atlanta; Haver Analytics; author's calculations.

Hypothesis 1: Inflation



Compounds the puzzle as real wage acceleration < nominal wage acceleration



Inflation has increased in the last few years, compounding the puzzle—real wage growth has been effectively unchanged.

Hypothesis 2: Slack



Compounds the puzzle because labor markets have tightened, especially broader measures

Measures of Labor Market Slack

	2015:Q2	2018:Q2	Change
Short-term Unemployment Rate	3.9	3.1	-0.8
Unemployment Rate	5.4	3.9	-1.5
U5.5	8.6	6.2	-2.4
Prime-age (25-54) Nonemployment Rate	22.7	20.8	-2.0

Labor markets are much tighter now than three years ago, so looking at slack also deepens the puzzle.

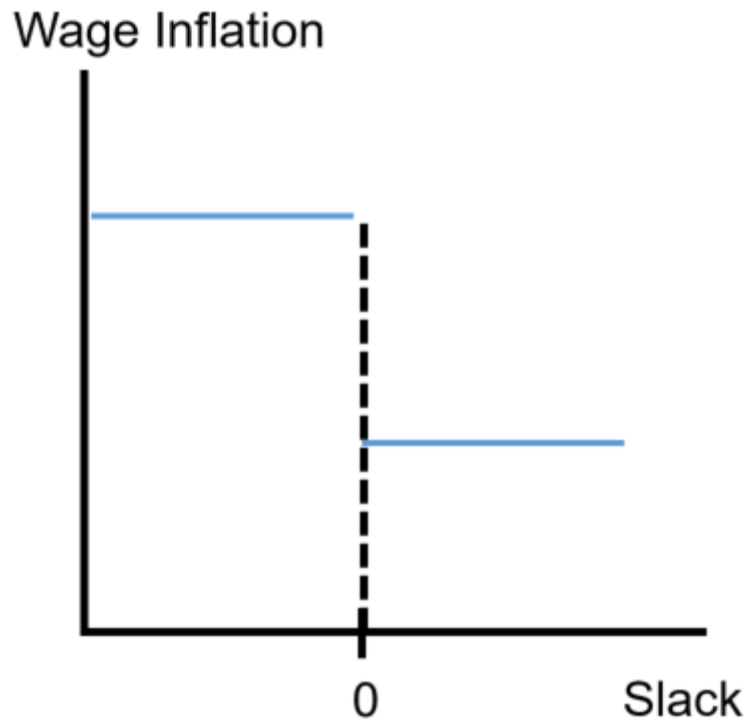
Broader measures of slack have tightened even more than narrower measures have.

Note: U5.5 is the number of unemployed, plus the number marginally attached to the labor force, plus 0.5 times the number working part-time for economic reasons as a share of the sum of the labor force and the number marginally attached to the labor force.

Source: Bureau of Labor Statistics; Haver Analytics; author's calculations.

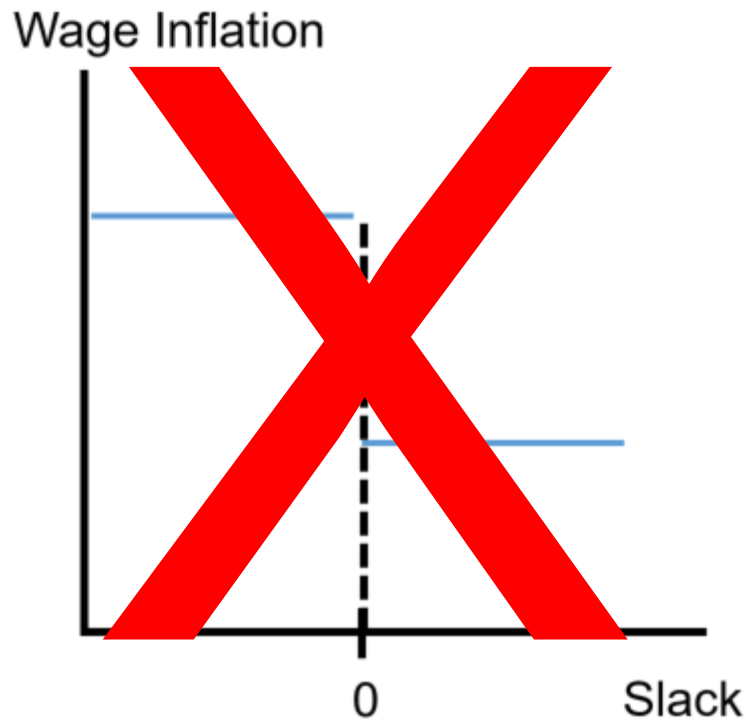
Hypothesis 2: Slack

Remember what matters is “fuller employment” not “full employment”



Hypothesis 2: Slack

Remember what matters is “fuller employment” not “full employment”



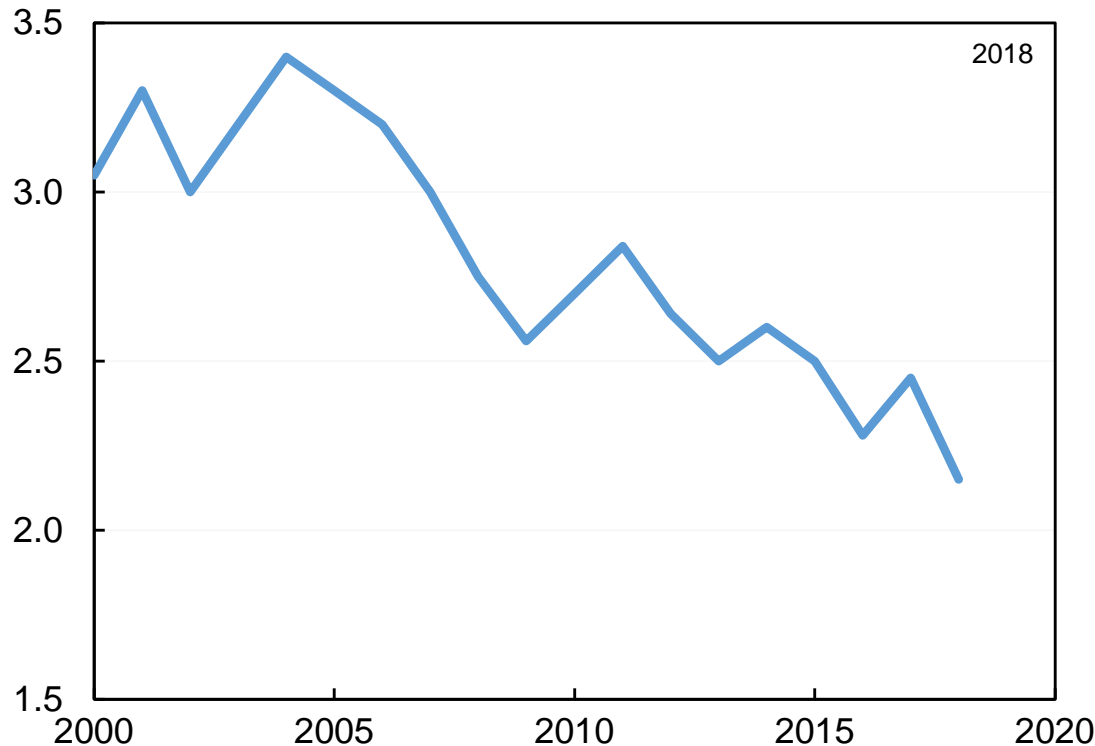
Hypothesis 3: Productivity



Slowdown only understood and priced in with a lag could help explain Puzzle #2

SPF: Projected Real GDP Growth Rate, Next 10 Years

Percent Change, Annual Rate



Falling expectations for long-term growth indicate that expectations for trend productivity growth have been revised down over time.



Takeaways from the wage puzzles

Explanations	Wage Puzzle #1: Slower than Late 1990s	Wage Puzzle #2: Has Not Picked Up in Last 3 Years
Inflation	Partly explains: Trend inflation lower so nominal wage growth lower.	Deepens the puzzle: Trend inflation has picked up.
Inequality	Deepens the puzzle: Inequality was increasing much more in the late 1990s and is even decreasing in some dimensions now.	Does not explain: No evidence inequality/institutions has changed in the last few years.
Productivity	More than explains: Much slower productivity growth leads to much slower wage growth.	Possible explanation: Downward revisions to productivity expectations could cause downward pressure on wage growth.
Slack	Does not explain: Slack similar/tighter than late 1990s (except EPOP).	Deepens the puzzle: Slack much lower than 3 years ago, especially for broader measures.



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