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Upjohn Institute New Hires Quality Index for July 2018 shows overall 0.3 percent rise, plus an in-depth look at actual new hire wage growth for Labor Day

KALAMAZOO, Mich.— In July 2018, the Upjohn Institute New Hires Quality Index shows inflation-adjusted hourly wages of individuals starting a new job rose 0.3 percent from a year prior, at $16.08. Hourly wages of new hires have risen 5.4 percent since 2005, according to the index. Over the past month, the wage index fell by 0.1 percent.

The index and accompanying interactive database and report, developed by Upjohn Institute economist Brad Hershbein, fill a key gap in the measurement of hiring activity. The NHQI provides monthly updates on the volume and occupation-based wages of newly hired workers, and is available for different groups based on sex, age, education, and other characteristics.

New Hires Hourly Wage Index: All
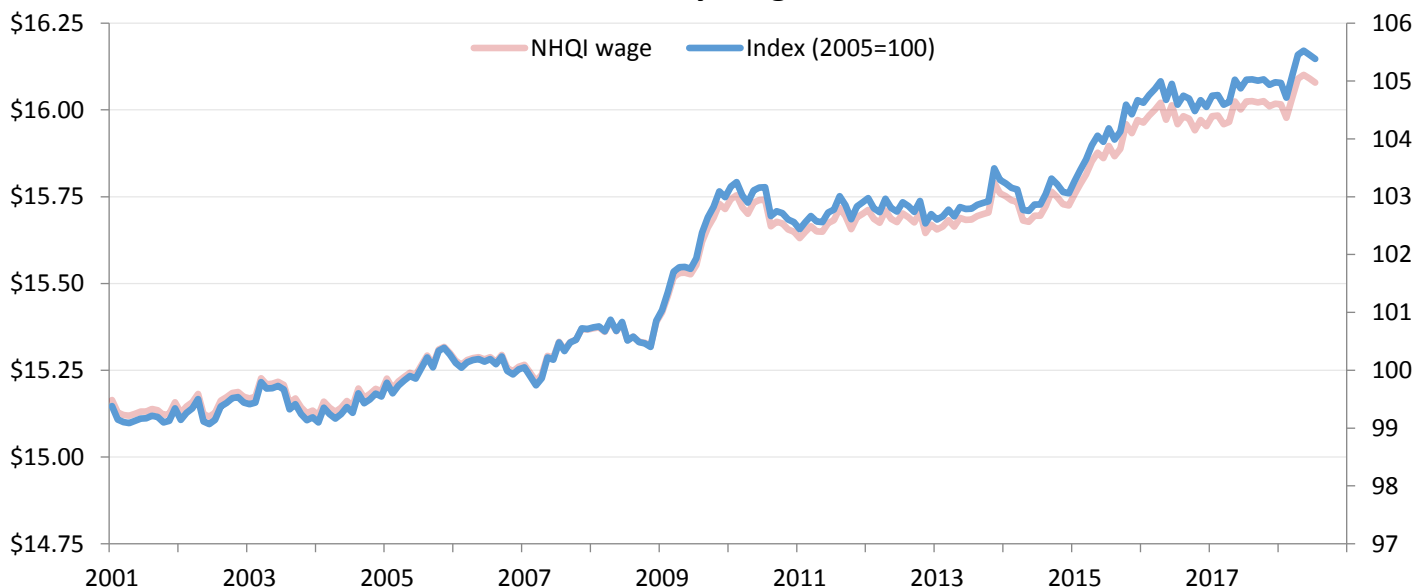
SOURCE: Upjohn Institute New Hires Quality Index

NOTE: The lighter (salmon) line uses the left axis and shows the inflation-adjusted hourly wage of new hires. The darker (blue) line uses the right axis and shows the relative change since the base year of 2005.

As documented in the FAQ below, the NHQI does not measure actual wages but rather the earnings power of newly hired workers as proxied by their occupation and demographic characteristics. While there are pitfalls to using actual wages of new hires (also described in the FAQ), they can sometimes be illustrative, especially when compared to the NHQI.

Notably, there has been considerable debate recently about the extent of slack in the labor market, and whether slow wage growth—even as the economy strengthens—may be due to employers colluding to

prevent raises. This argument [reached](#) the Federal Reserve at its recent Jackson Hole conference, with former Council of Economic Advisors chair and Princeton economist Alan Krueger [arguing](#) that declines in workers' bargaining power have kept down wage growth. Moreover, while much of the debate regarding wage growth has used average wages of incumbent workers—it's what is typically available—existing [theory](#) and [evidence](#) suggests that wages of new hires should be more responsive to economic conditions than wages of incumbents.

The NHQI shows that newly hired workers have steadily become more skilled, but it does not address whether these workers are being paid commensurate with these higher skills, or how a stronger economy has translated into actual wages. To explore this question, the figure below plots the NHQI wage (in blue) and the average reported wage of newly hired workers (in salmon); both are adjusted for inflation to year 2017 dollars.[1] Both series have risen over time, although reported wages have both risen more and are more volatile. The greater volatility is not surprising, as the underlying series is based on a smaller sample and there is greater variation in the wages of individuals than in the occupation-driven NHQI. After the well-known rise in wages in the late 1990s, reported wages bounced around but were largely flat from the early 2000s until a surge in 2015. From the start of 2015 to the summer of 2017, the real hourly reported wage of newly hired workers rose from about $15.55 to about $17.20—a gain of over 10 percent, or just under 4 percent per year. This is almost the same pace of real wage growth achieved in the late 1990s. However, over the past 12 months, reported wage growth of new hires has completely stalled, even as the NHQI continues a gradual increase.

### NHQI and CPS Reported: Real Hourly Wage
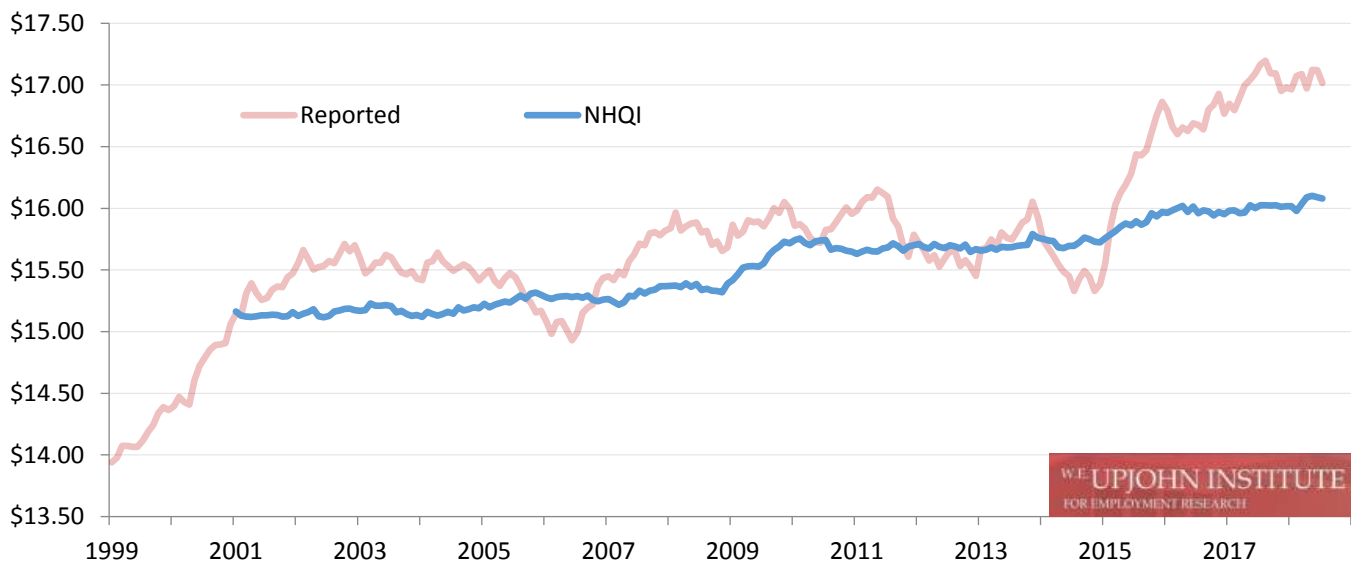
These percentage changes can be more clearly seen in the next figure, which normalizes each wage series to its respective value in 2005. As of July 2018, reported wages are up 10.8 percent from 2005, exactly twice the gain for the NHQI. Loosely speaking, this implies that about half the wage growth in reported wages of new hires is due to occupational compositional shifts and changing demographics (accounted for by the NHQI), and the remaining half due to other factors, including individual aptitude, geography, employer characteristics, and sharing in productivity growth. This last factor, which unfortunately cannot be separated from other factors unobservable in the data, comes closest to representing true wage growth: what two otherwise

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[1] As detailed in the [technical report](#), the reported wage includes only non-imputed responses, and for consistency with the NHQI, is also shown as a 12-month lagged moving average. The figure is an updated version of the one in the technical report. CPS stand for Current Population Survey, the source for identifying newly hired workers.

identical individuals doing the same work for the same company would be expected to get paid at different times.

**NHQI and CPS Reported: Real Hourly Wage (2005=100 Index)**
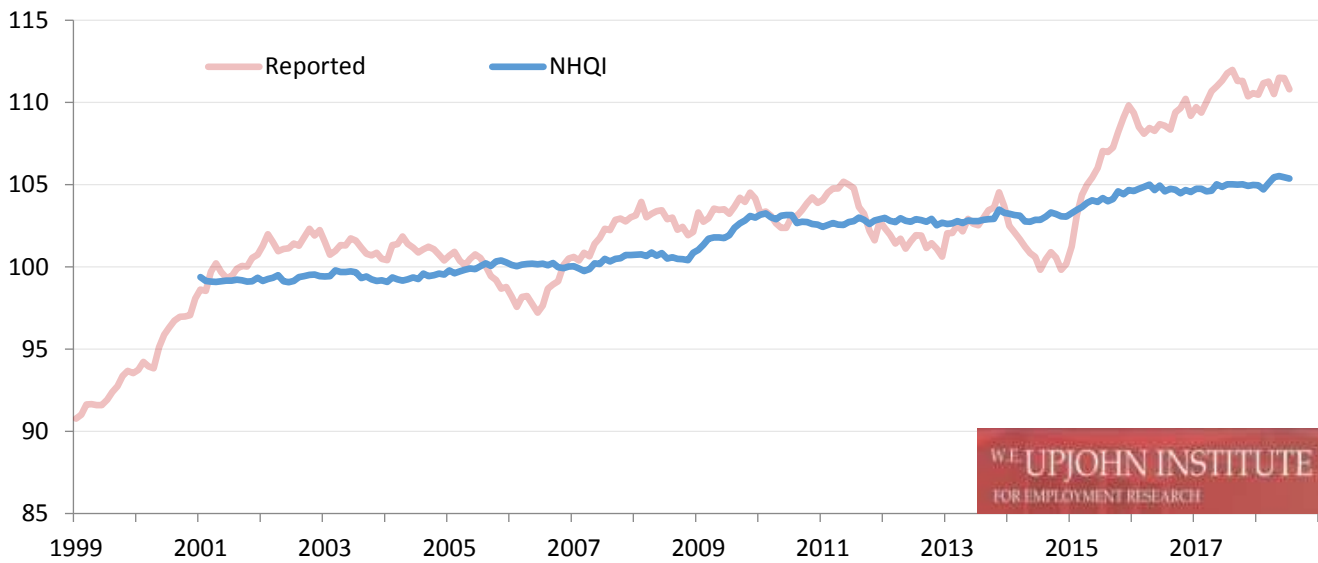
Of course, trends in average wages can mask what is going on at different points of the wage distribution, especially when it is well known that [inequality has been increasing](#). Put differently, was the rapid increase in average wage growth of new hires between 2015 and 2017 occurring broadly or was it driven by high earners? The figure below provides context by showing the real hourly reported wage ($2017) of new hires for different percentiles. For example, at the 10th percentile—the point at which 10 percent of new hires makes less and 90 percent make more—hourly wages in July 2018 were about $8.11, less than one dollar above the federal minimum wage. In contrast, at the 90th percentile, wages were $33.11 per hour, more than four times as much. The 50th percentile, or median, where half of newly hired workers earn more and half earn less, was $12.34, much less than the mean value of $17.00 found above. Thus, earnings of the typical new hire (represented by the median) diverge quite a bit from the average, which is skewed by higher earners. The divergence speaks to the importance of looking at the entire wage distribution.

CPS Reported: Real Hourly Wage, Selected Quantiles
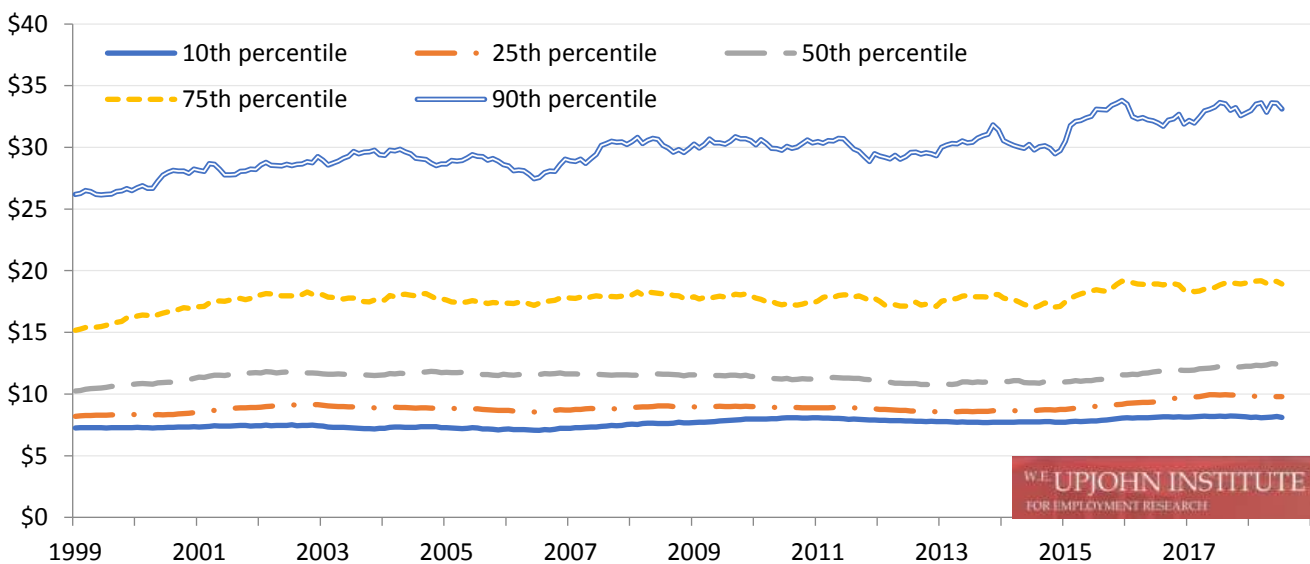
To see growth in the distribution more clearly, however, it is helpful to normalize the series. In the figure below each selected wage percentile is normalized to its value in 1999, and the mean is included for reference. (The trends are clearer than if normalized to 2005.)

CPS Reported: Real Hourly Wage, Selected Quantiles (1999=100)
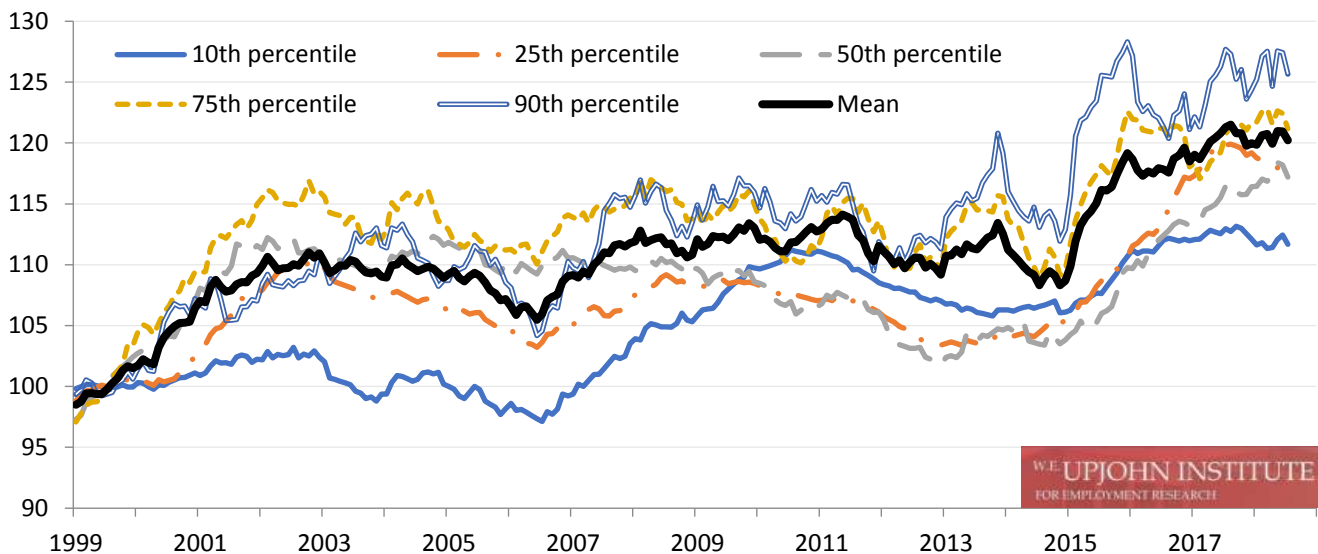
Whereas the mean reported wage of new hires increased 10.8 percent from 2005 to today, when the reference frame is 1999, the cumulative increase is nearly twice as much, at 20.2 percent. This works out to an annualized rate of growth of 1.0 percent since 1999, but only 0.8 percent since 2005.

However, the graph shows sizable deviations from the mean for the different quantiles. Notably, the 10th percentile had minimal growth before 2007, decent growth between 2007 and 2011 (as federal and state minimum wage hikes phased in), and very little net growth since. The total gain since 1999 for this part of the distribution is only 11.7 percent, well below the other quantiles, and equivalent to an anemic 0.6 percent annualized growth. Although its growth rate was not as bad, the 25th percentile also experienced slow growth for most of the period, until very rapid catch-up since 2015. The median, too, trended similarly, except for somewhat stronger pre-recession growth.

In contrast the upper quantiles, the 75th and especially the 90th, have experienced the most rapid increases through most of the past 20 years, and do appear to have driven the increase in the mean. This pattern accords with the continuation of growing wage inequality, but it is worth pointing out that the net result was worse in 2016 than today, as stronger wage growth in the lower parts of the distribution persisted even as wage growth in the top half has slowed considerably in the last 30 months.

This last pattern does not seem to accord with the explanations of monopsony holding down wage growth, unless worker bargaining power has suddenly begun to fall for higher-earners and simultaneously rise for those in the lower middle as the labor market tightens. However, there is another way to look at wage gains of new hires throughout the distribution. The next figure plots the gain for each percentile of the wage distribution (from the 5th to the 95th) between the average of 1998–2000 and the most recent 36 months; for simplicity, these periods are denoted 1999 and 2017, respectively.[2]

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[2] The years are pooled at both the start and the end to permit a sufficiently large sample.

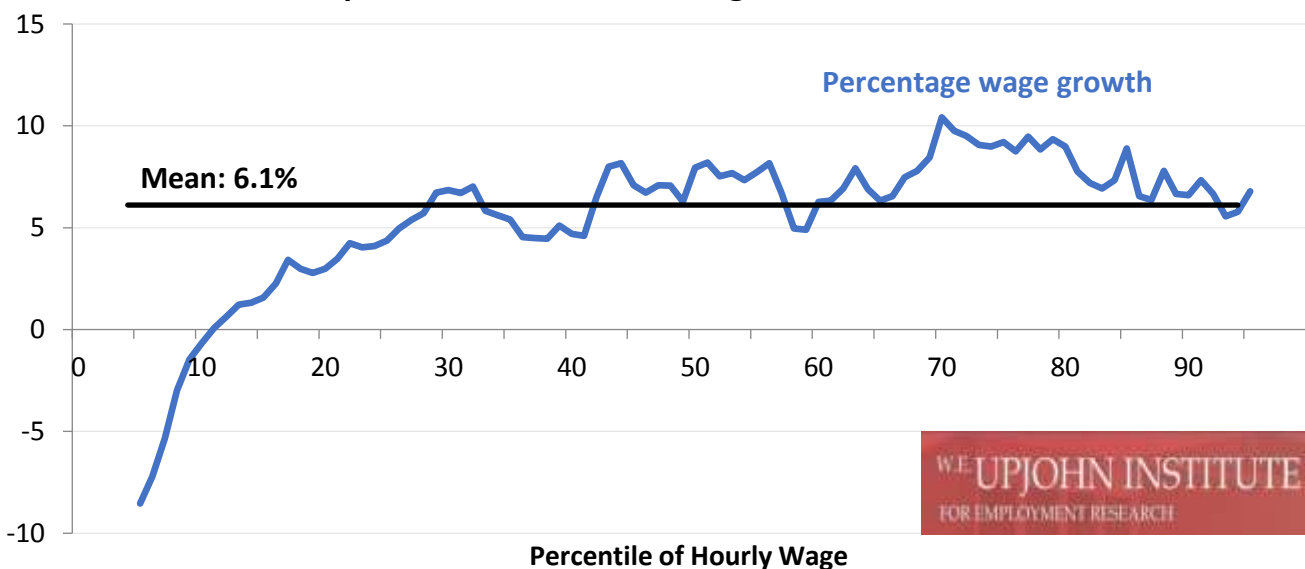## CPS Reported Distributional Wage Growth: 1999–2017
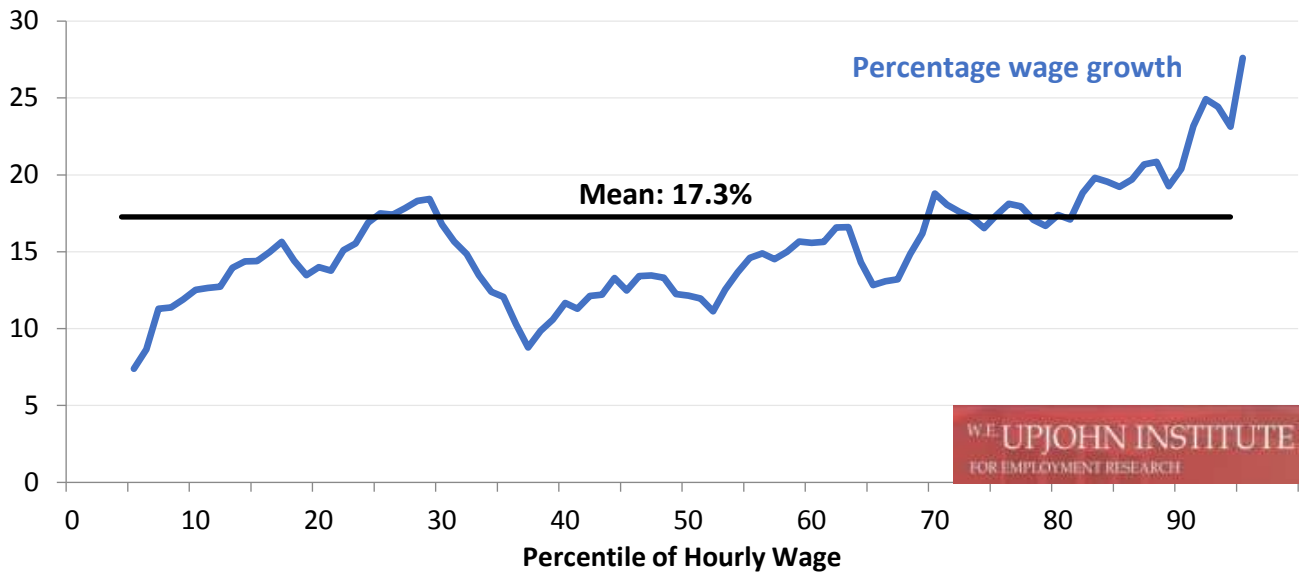
NOTE: The blue line shows real wage growth for each percentile between the average of 1998–2000 (denoted 1999) and the average of August 2015 through July 2018 (denoted 2017). The horizontal black line shows the mean wage growth over this horizon.

When the beginning and end periods are pooled, the mean wage growth falls slightly, to 17.3 percent, compared to 20.2 percent in the previous figure. However, since the blue line tends to fall below the black line, especially at lower percentiles, this figure clearly shows that most new hires experienced slower wage growth than that captured by the mean. The apparent catch-up of the 25th percentile in the previous figure appears to be a blip in the data when viewing the entire distribution; the bottom two-thirds are generally well below the mean, while the top fifth is well above it. Put differently, the growth in wage inequality is quite evident among new hires.

We can also divide the time horizon into shorter periods to see how growth across the wage distribution of new hires changed over different parts of the business cycle.
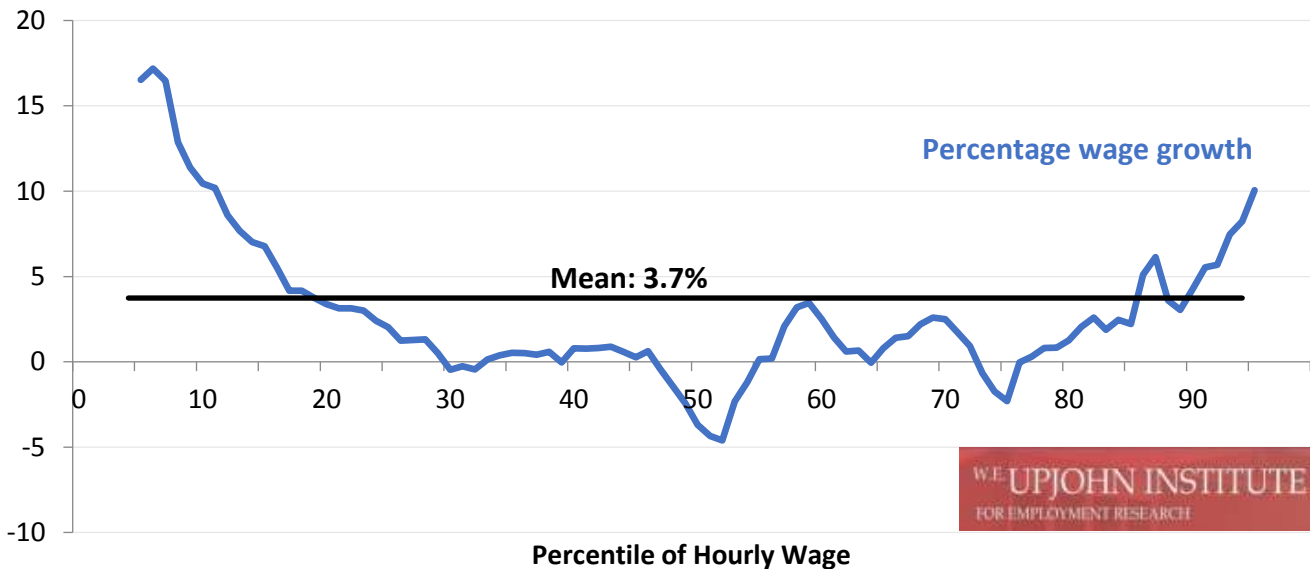
CPS Reported Distributional Wage Growth: 1999–2005

NOTE: The blue line shows real wage growth for each percentile between the average of 1998–2000 (denoted 1999) and the average of 2004–2006 (denoted 2005). The horizontal black line shows the mean wage growth over this horizon.

The figure above, for example, shows wage growth between the late 90s and the mid-2000s, before the Great Recession, but spanning the early 2000s recession. Over this interval, the top two-thirds of the distribution had roughly similar wage growth, although the bottom third fell behind, with the bottom tenth experiencing real losses as the minimum wage failed to keep up with inflation. Average real wage growth was about 1.0 percent per year.
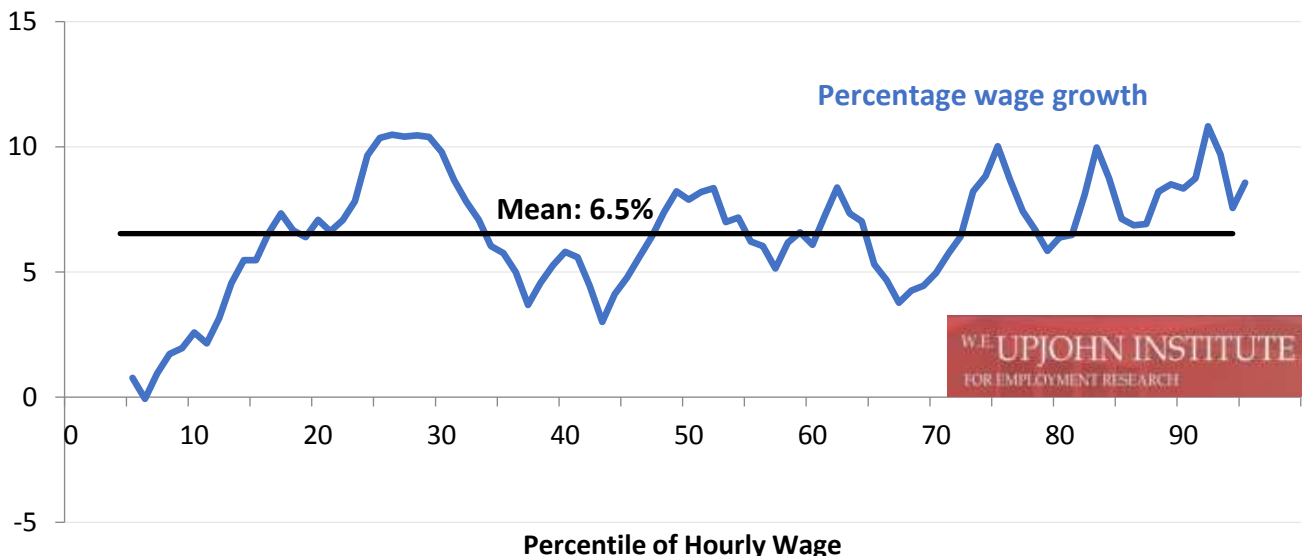
CPS Reported Distributional Wage Growth: 2005–2010

NOTE: The blue line shows real wage growth for each percentile between the average of 2004–2006 (denoted 2005) and the average of 2009–2011 (denoted 2010). The horizontal black line shows the mean wage growth over this horizon.

The pattern looked completely different over the following five years that ended in the depths of the Great Recession. Not only was average real wage growth of hires much less, at 3.7 percent, or 0.7 percent annually, but this growth was driven almost entirely by the bottom, who benefitted from the federal minimum wage increases from $5.15 to $7.25 in this period. The rest of the distribution, except for the very top, experienced essentially zero real wage growth.

CPS Reported Distributional Wage Growth: 2010–2017

NOTE: The blue line shows real wage growth for each percentile between the average of 2004–2006 (denoted 2005) and the average of 2009–2011 (denoted 2010). The horizontal black line shows the mean wage growth over this horizon.

However, one of the motivations for looking at actual reported wages of new hires was the concern over remaining slack in the labor market, and whether employers are exerting market power to keep down wage growth as the economy continues to strengthen. The figure above shows distributional wage growth from the Great Recession to today. Although the growth line is somewhat volatile throughout the distribution, there is only slightly faster growth at the top than in the middle, especially if the bulge around the 25th percentile is included. Instead, the biggest aberration in growth is at the bottom, over a horizon when the federal minimum wage was stagnant.

What does this imply for labor market slack and employer market power? Economics theory suggests that higher earners should be less subject to employers' market power because they tend to compete in larger labor markets at the regional or national levels and thus have more employers to consider; empirical evidence supports this pattern. While we should be careful not to read too much into descriptive graphs, the figure above is also consistent with this hypothesis, but only weakly: real wage growth of new hires is faster at the top than at the middle, but not by much, and not that differently than in the early 2000s. Moreover, wage growth of new hires at the top of the earnings distribution has notably slowed since 2016, when the unemployment rate was about 1 percentage point higher than it is today. Rather, the story appears more compelling at the very bottom, where despite a strong labor market, real wage growth has barely budged in the absence of legislative action.

It is an unresolved question as to why wage growth has been relatively weak despite other signs of a strong labor market, but as this release demonstrates, analyzing the wages and characteristics of newly hired workers can provide new insights.

Interactive charts and data downloads can be found at the website for the Upjohn Institute New Hires Quality Index: www.upjohn.org/nhqi. Statistics for actual wage growth are not currently available, but may be added in the future.

The technical report, including methodology, can be found here: http://www.upjohn.org/nhqi/reports/NHQI_report.pdf.

All data will be regularly updated during the first week of the second month following the reference of the data release month. For example, data for July 2018 will be released during the first week of September 2018. To sign up to regularly receive monthly press releases for the Upjohn Institute New Hires Quality Index, visit: www.upjohn.org/nhqi/signup.

FAQ

1. **What is the New Hires Quality Index?**

The New Hires Quality Index (NHQI) is a consistent way of measuring the earnings power of people taking new jobs each month, allowing comparisons over time.

2. **How is the Index constructed?**

The Index is based on the occupations of newly hired workers as documented in the [Current Population Survey](#), the same source used to produce the national unemployment rate each month. Separate data on the hourly wages for each occupation from another government survey, [Occupational Employment Statistics](#), are connected to the newly hired workers in the Current Population Survey. These hourly wages are then statistically adjusted to account for differences in the demographic composition of new hires (sex, race and ethnicity, education, and age) before being averaged.

3. **Does the Index measure actual, reported wages of newly hired workers?**

No. Although the data used to create the Index do have some information on self-reported wages (or those reported by another household member), many economists consider these self-reported wages [increasingly unreliable](#), as a growing fraction of workers refuse to answer the wage questions, and the government's attempts to impute (make an "educated guess") for these workers are [problematic](#). Moreover, because relatively few workers are even asked the wage questions, and only a small subset of these are newly hired, use of the self-reported wage data would lead to very small samples.

The Index captures change in the wages of new hires due to both changes in the mix of occupations hired and the demographic characteristics of individuals taking new jobs. It will not capture change in the wages of new hires due to other factors, such as individual aptitude, geography, or employer characteristics.

A comparison of the Index with a series derived from the actual self-reported wages in the Current Population Survey can be found in the [technical report](#).

4. **Does the NHQI count self-employed workers?**

No, the NHQI excludes self-employment and people who work for themselves.

5. **How often is the NHQI updated?**

Every month, with the release by the Census Bureau of the Current Population Survey microdata. Updates will be posted on the [NHQI website](#) by approximately the last Monday of the month, covering data from the previous month. Data are currently available from January 2001 through July 2018. To receive updates through email or social media, [visit the signup page](#).

6. **What data are available on the NHQI website?**

The [NHQI website](#) contains monthly data for all components of the NHQI. The four main components are: the hourly wage index, the hiring volume index, the wage bill index (the product of hourly wages and hiring volume), and the hires per capita index. Each component is available in its actual level or normalized to the base year 2005. In addition to providing data for all new workers, the NHQI exists for men, women, different age groups, different education groups, different races/ethnicities, different industry sectors, different regions, native and foreign-born, full- and part-time workers, and different types of new hires (the newly employed and employer changers). All data can be charted interactively or downloaded for separate analysis.