Cornell Law School
Jack G. Clarke Program on the Law and Regulation
of Financial Institutions and Markets

The U.S. Private Sector Job Quality Index

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The U.S. Private Sector Job Quality Index (JQI®)

This presentation accompanies the release of our introductory paper describing the JQI, which can be found at www.jobqualityindex.com.

The JQI Project is a cooperative venture of the following institutions:

The Coalition for a Prosperous America Education Fund

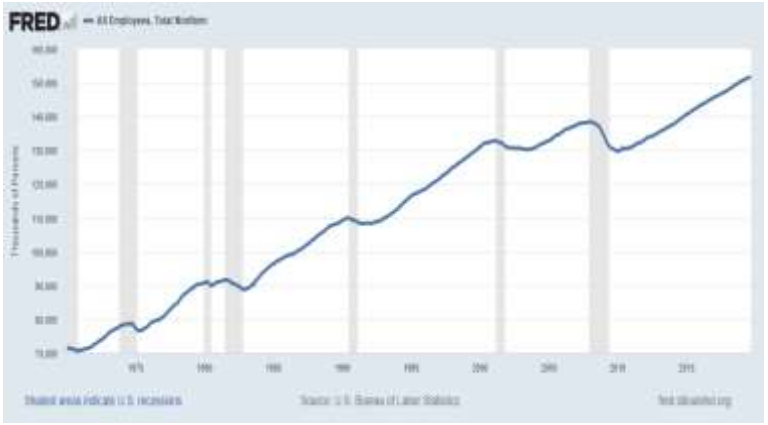
The Jack G. Clarke Institute of Cornell University Law School

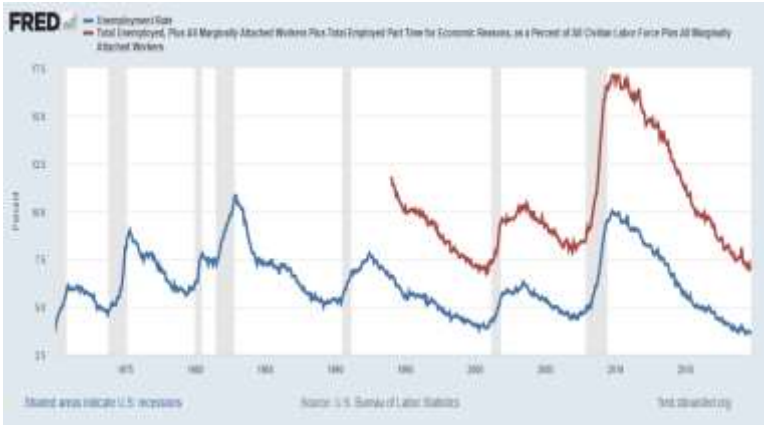
The University of Missouri Kansas City – Department of Economics

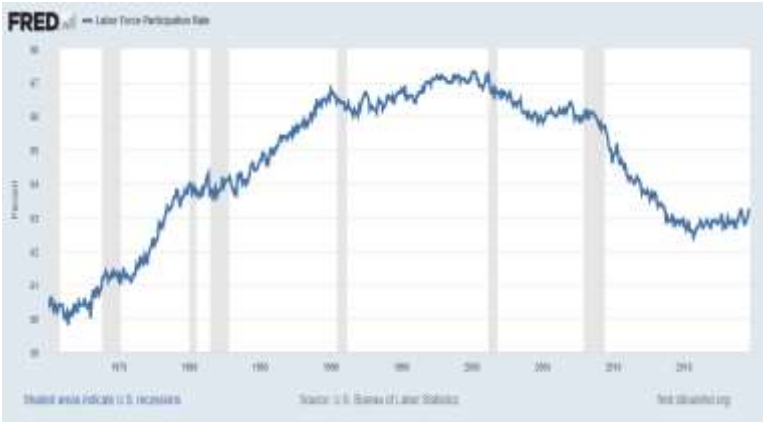
The Global Institute for Sustainable Prosperity

Headline Employment Data is not Revealing the Full Story

The data points most used by market analysts, the media and policy makers to assess the Employment Situation in the United States are the number of jobs created each period, hourly wages, hours worked, the unemployment rate, and—to a lesser extent—the labor force participation rate:

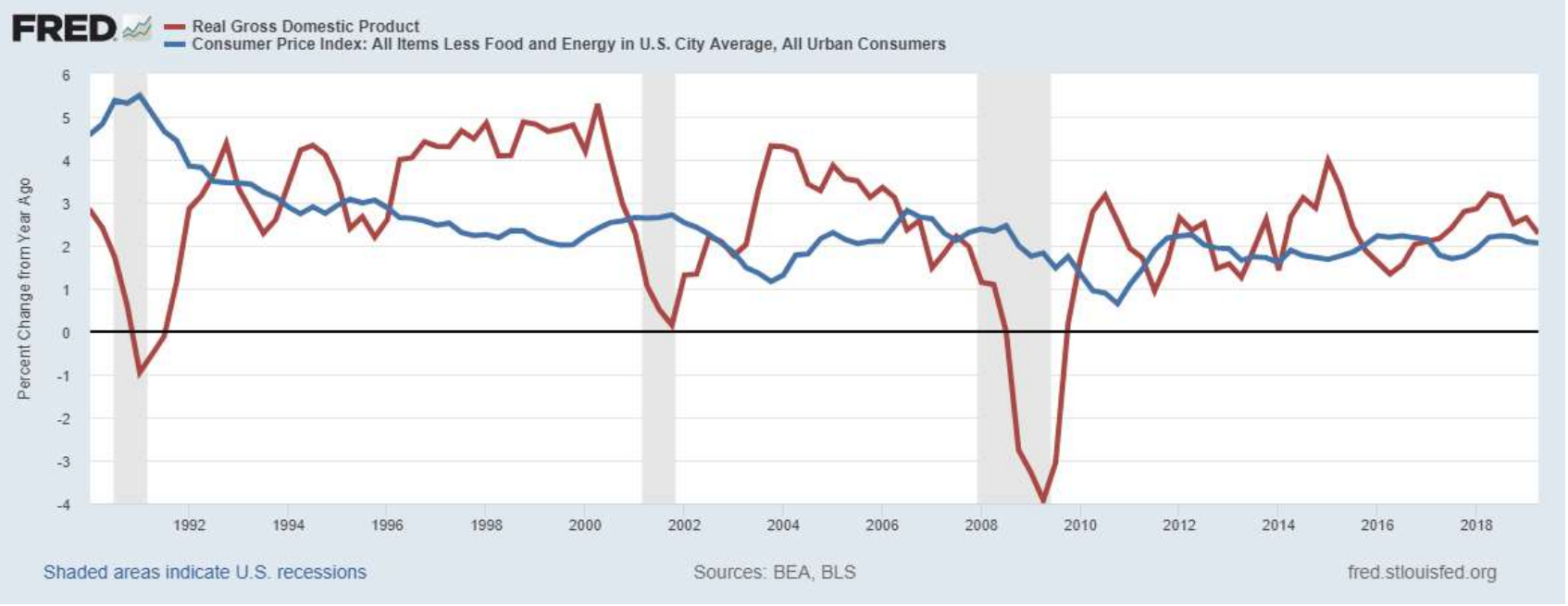






The Historical Correlation Between Low Unemployment and Sustained Job Formation, and Inflation/Growth Has Vanished

Despite historically low unemployment rate and sustained high to moderate levels of job formation, the U.S. has experienced sluggish hourly wage growth, flat or declining hours worked, a persistently low labor force participation rate, and subdued rates of core inflation and economic growth throughout the post-Great Recession period:

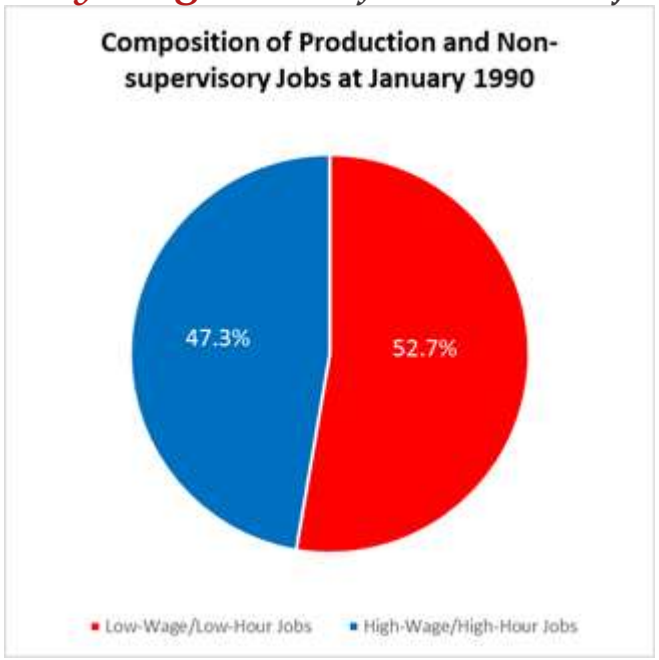


The JQI Project's business, think tank and academic economists asked – WHY?

The JQI is a New Metric to Track and Explain this Paradox

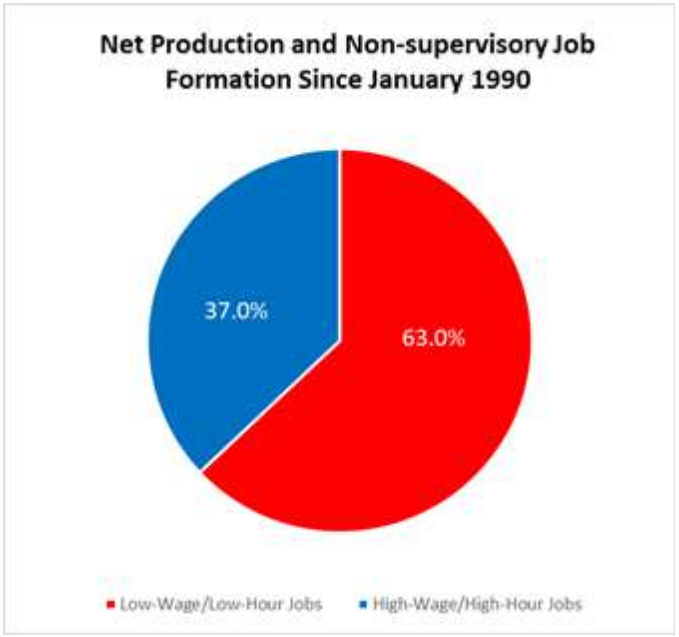
Private sector jobs available in the U.S. have declined materially in "quality," as measured by the weekly dollar-income they generate. The JQI focuses on Production and Non-supervisory ("P&NS") jobs – 82.3% of all private sector jobs.

At the beginning of the 1990s, 52.7% of all P&NS jobs were below the weekly wage mean for all such jobs.



Source: Bureau of Labor Statistics and authors' calculations

Yet, for the past three decades, 63.0% of the new P&NS jobs created have fallen below the weekly wage mean for all such jobs.

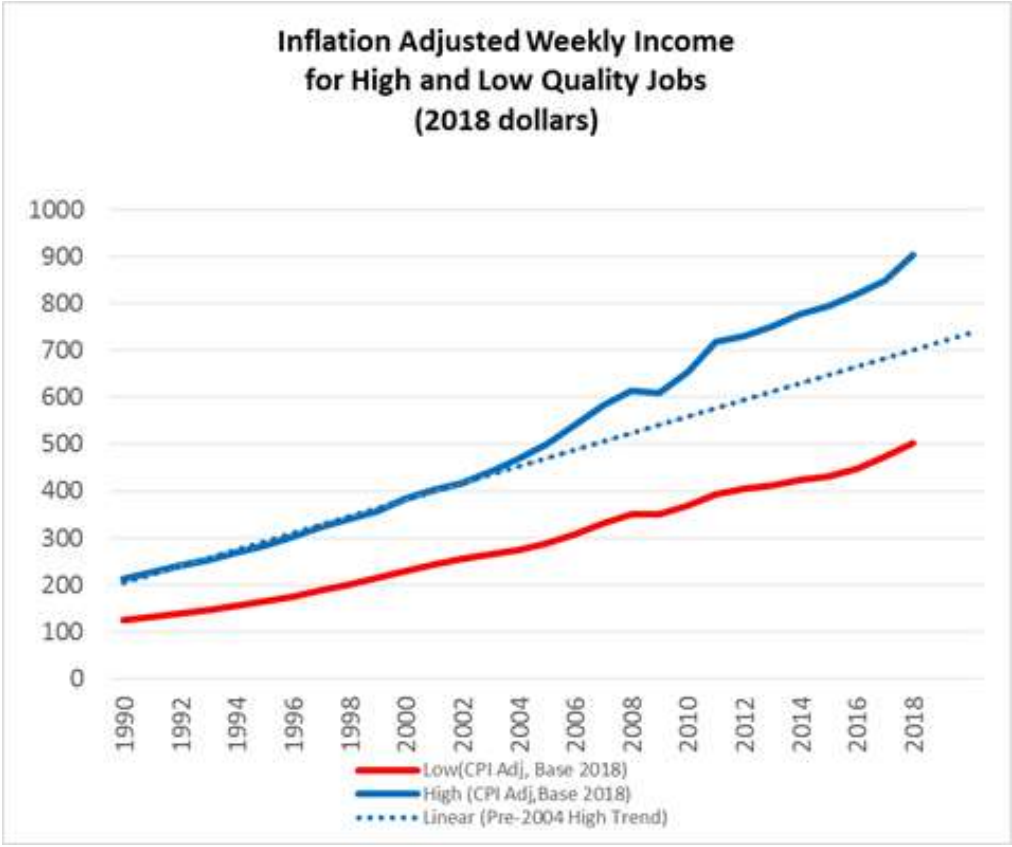


Source: Bureau of Labor Statistics and authors' calculations

The 21st Century Exacerbation of Income Disparities

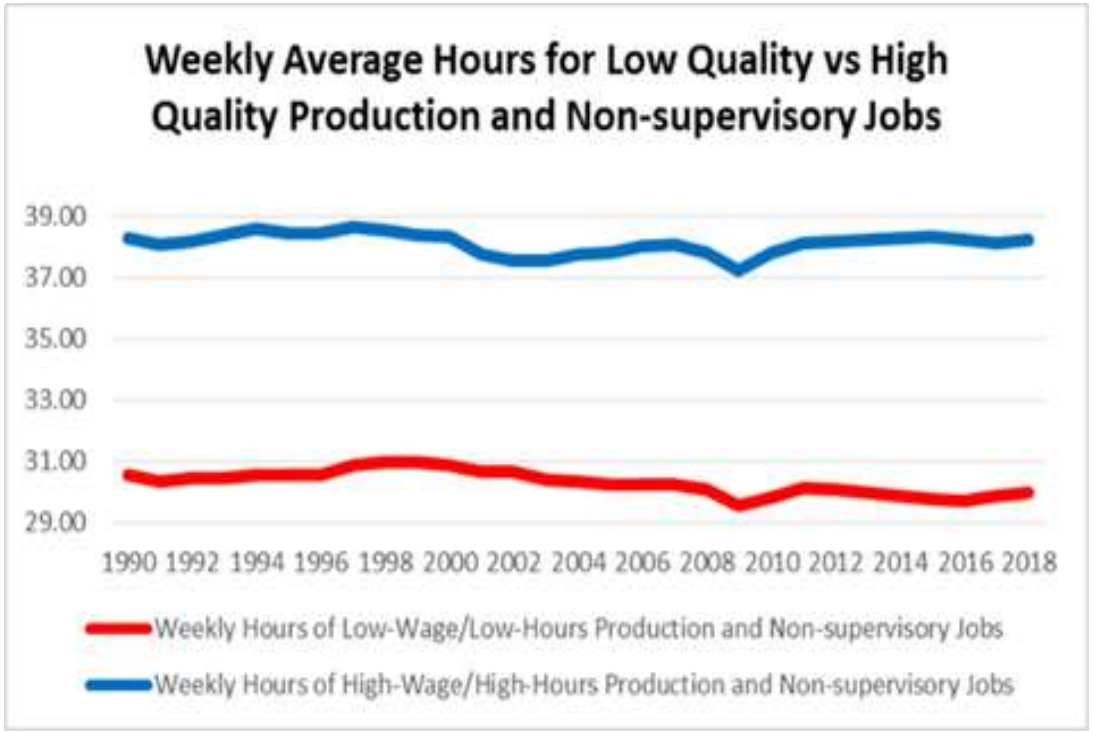
The P&NS jobs are separated into two cohorts, with those above the weekly wage mean treated as High-Wage/High-Hour Jobs (High Quality) and those below as Low-Wage/Low-Hour Jobs (Low Quality). Analysis of the data, organized in this way, reveals some troubling trends:

First, the rate of inflation-adjusted income growth of higher quality jobs — approximately the same that of lower quality jobs from 1990 through 2003 — has diverged markedly to the upside, particularly in the post-recession years.



Source: Bureau of Labor Statistics and authors' calculations

The 21st Century Exacerbation of Income Disparities (cont'd)



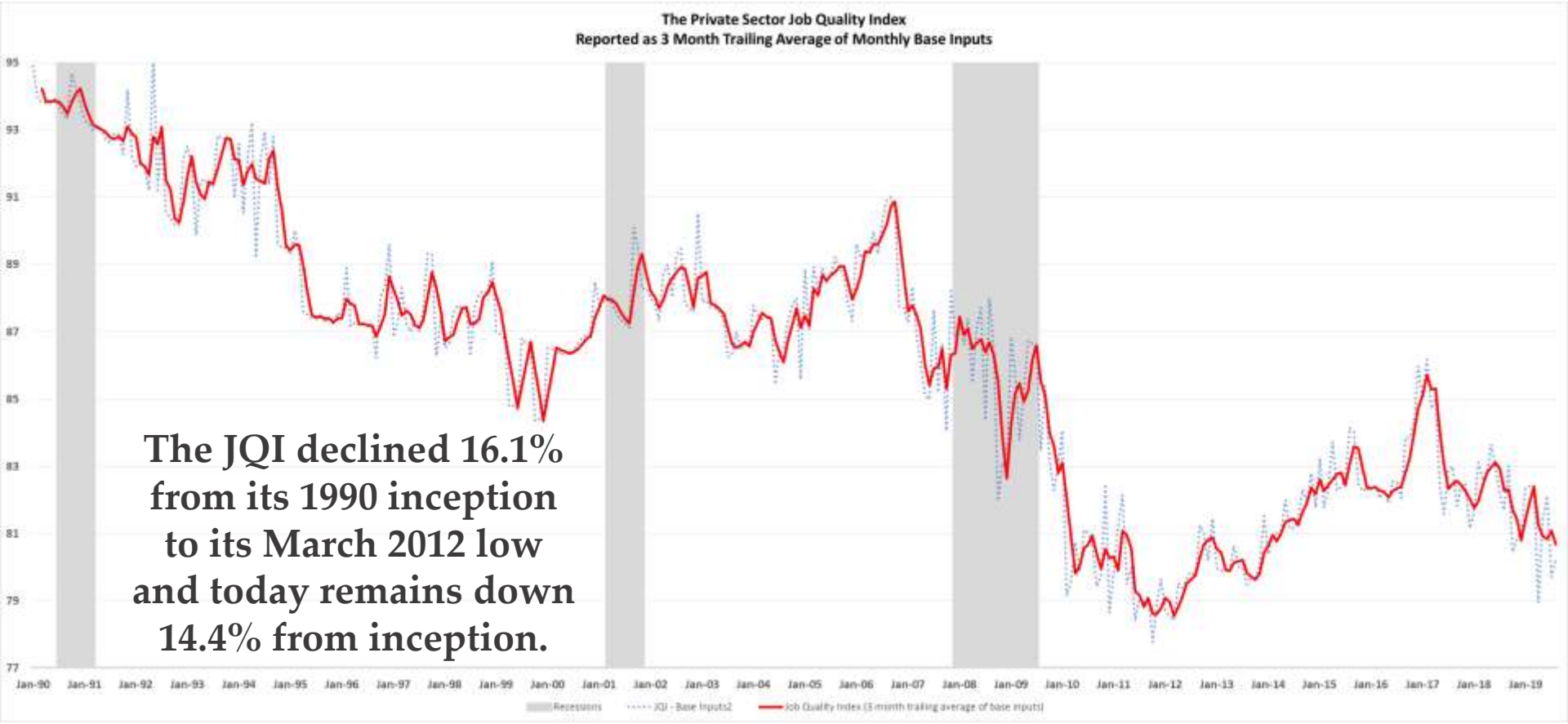
Source: Bureau of Labor Statistics and authors' calculations

Second, low quality jobs not only provide far fewer hours of work, but have also seen a net reduction in average hours worked per week, of a full hour—from a peak 31.0 hours in 1999 to 30.0 hours today. While high quality jobs have essentially held flat at 1990's 38.3 hours per week and have shaved only 24 minutes from their all-time high levels in 1997.

The JQI team combined these trends into an index that is monitored and updated monthly with BLS employment data. It is designed to fill an major gap in our understanding of changes in the composition of U.S. jobs and the impacts of these changes on other important economic and social metrics.

The U.S. Private Sector Job Quality Index®

The index presents the ratio of the number of high quality jobs divided by the number of low quality jobs (a reading of 100 indicates equal numbers of each) covering all non-farm private sector P&NS jobs in 180 distinct industry sectors and several sub-divided categories.



The JQI declined 16.1% from its 1990 inception to its March 2012 low and today remains down 14.4% from inception.

Source: The Cornell-CPA U.S. Private Sector Job Quality Index

Summary Technical Description of the JQI

The U.S. Private Sector Job Quality Index® is itself a relatively simple ratio, calculated as:

$$\frac{\text{Number of High Quality Jobs}}{\text{Number of Low Quality Jobs}}$$

- **The above two cohorts are established by sorting P&NS jobs, as reported by the BLS each month in the seasonally adjusted Current Employment Statistics (CES), into those above and below a mean weekly wage established for each given month.**

- **The mean weekly wage is indicated by the average weighted weekly wage within the CES set of 180 industry groups, weighted for the number of jobs in each group.**

Summary Technical Description of the JQI (cont'd)

- **Subsequent adjustments are made to industry groups**
  (a) with 1 million or more jobs, and
  (b) with average weekly wages clustered around the mean weekly wage, and
  (c) which contain widely disparate jobs types that would fall well to either side of the mean weekly wage.

- **These groups are subdivided further using data provided by the annual Occupational Employment Statistics (OES) survey.**

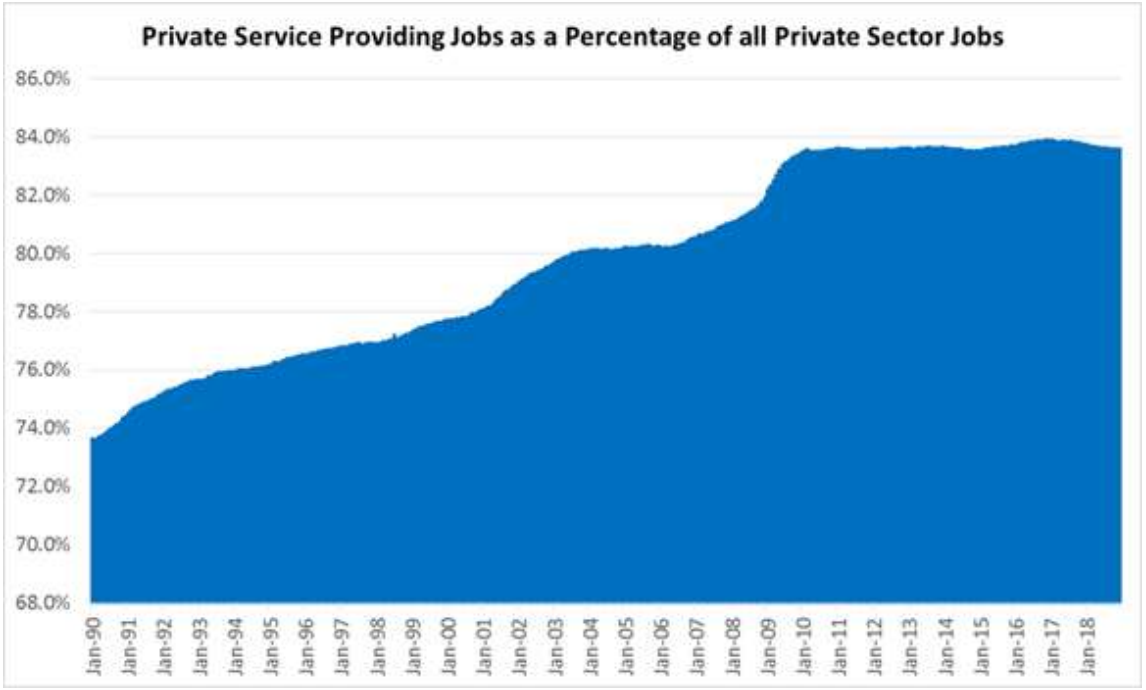
- **To minimize statistical noise due to month-to-month variability, the headline JQI reading is a three-month trailing average of individual monthly readings.**

- **Monthly updates to the JQI will be published and released on the day of release of the monthly BLS Employment Situation Report at noon, Washington DC time, which is 3.5 hours from the time of the BLS release.**

For complete technical information on the construction of the JQI, please see Part II of the research paper from with this deck is derived.

The JQI Shows Increased Reliance on Service Sector Jobs

The overall decline in the JQI is partially, but not entirely, the result of the persistent increase in service jobs, compared to goods-producing jobs, from the late 1970s through 2009, and the plateauing of this ratio since the end of that period.

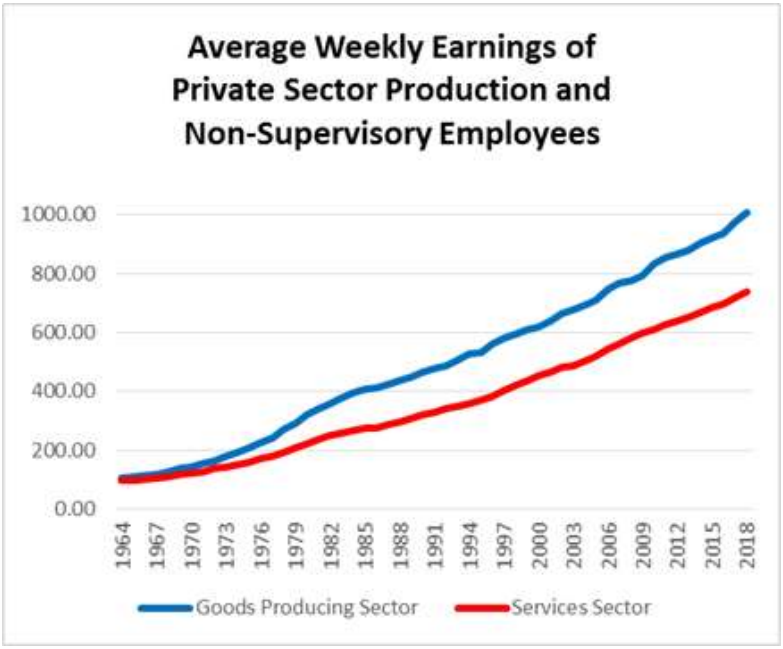


Source: Bureau of Labor Statistics

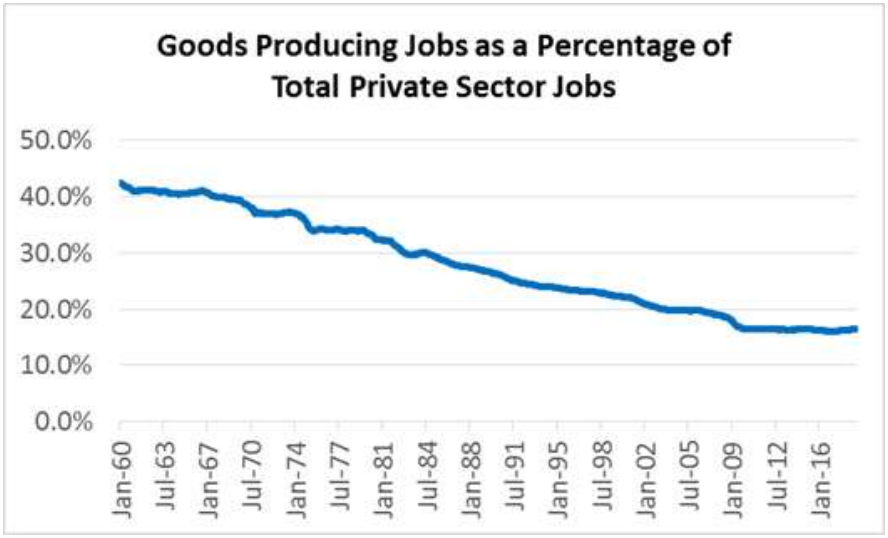
In the 1960s, by contrast, service sector employment was approximately 58% of total private sector employment. The jump of that ratio to its still-persisting level of approximately 83% during the Great Recession may demonstrate a level of "peak service sector employment" with about 17% as an effective lower bound for goods production employment.

The JQI also Reflects a Decline in Weekly Earnings from Service Sector Jobs, Compared to those of Goods-producing Jobs

Source: Bureau of Labor Statistics



Source: Bureau of Labor Statistics



Source: Bureau of Labor Statistics

The decline in the goods producing side of the economy has forced an abundance of workers into the services sectors with the predictable result being the loss of such labor's pricing power. This feeds back into the JQI results.

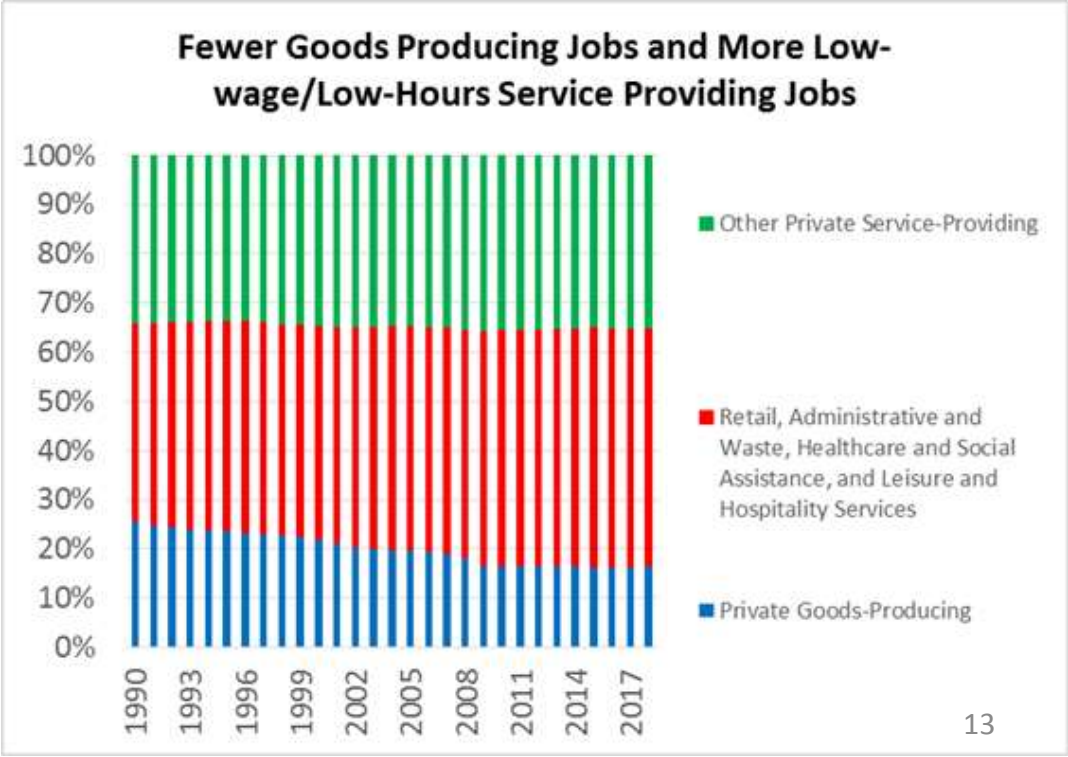
A Simple Example of Deterioration in Job Quality

The connection between the increased reliance on service sector jobs in the U.S., and declining job quality as measured by the JQI is strikingly, if simplistically, illustrated by looking at just four lower wage/lower hours sectors :

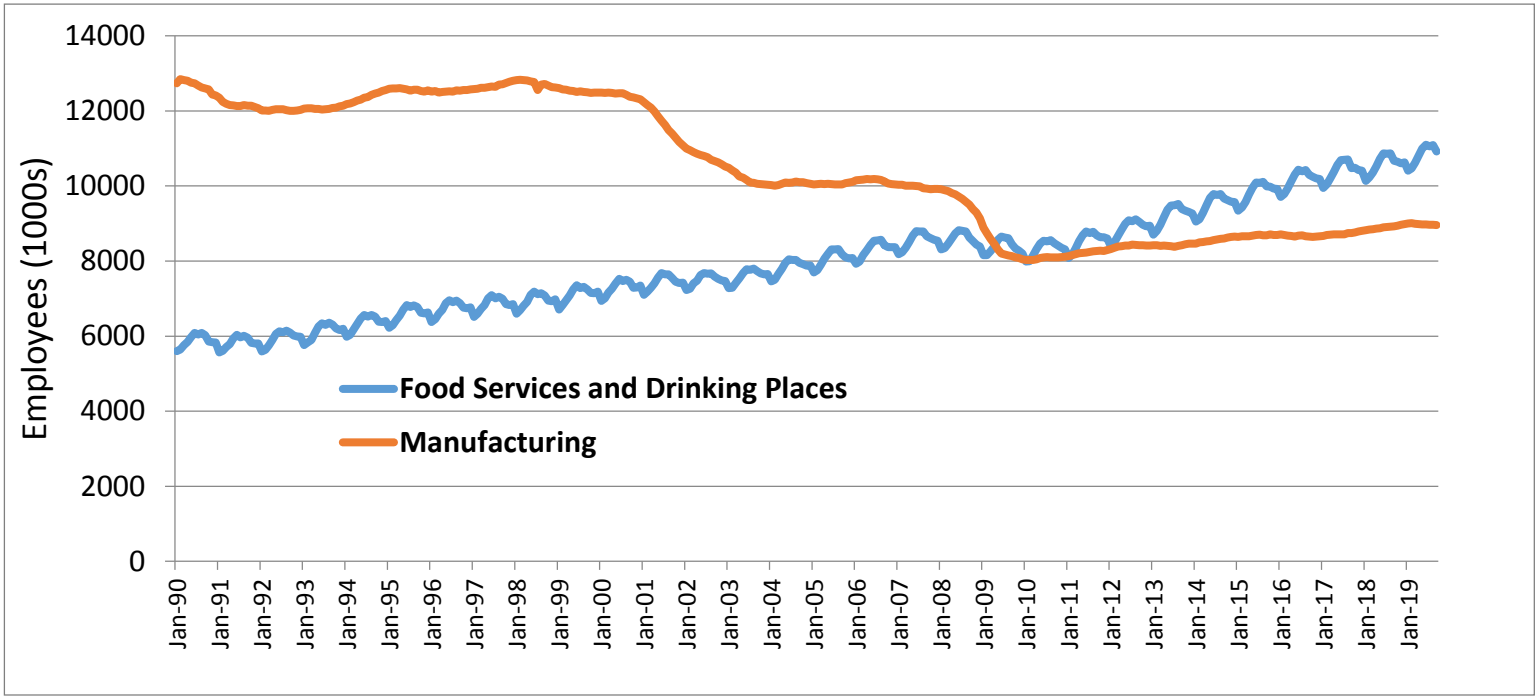
- **Retail**
- **Administration and Waste Services**
- **Healthcare and Social Assistance**
- **Leisure and Hospitality**

Compared to all other services sectors (many of which also contain relatively low-wage/low-hours) jobs in just these four sectors have replaced essentially all jobs lost in the private goods producing sectors over the past three decades.

Source: Bureau of Labor Statistics



Swapping High Quality Jobs for Low Quality: Manufacturing vs. Food Services & Drinking Places

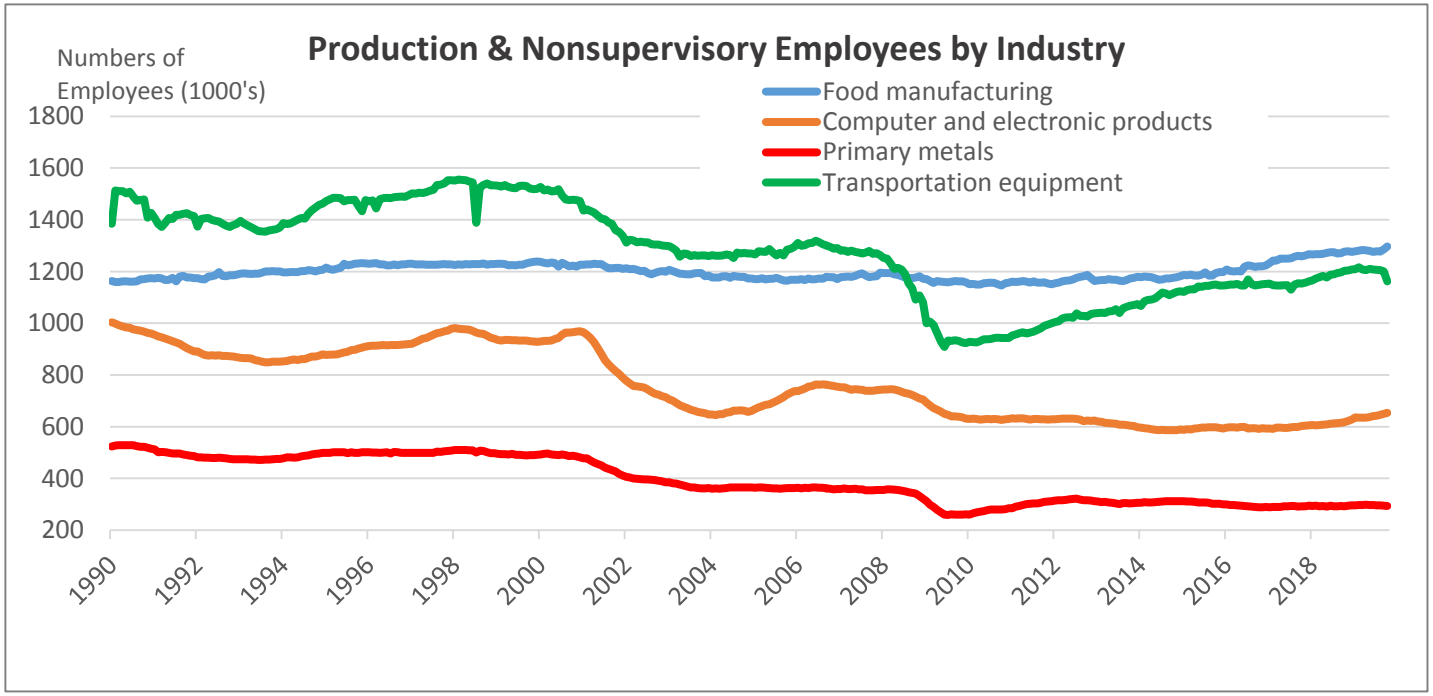


Source: Bureau of Labor Statistics

- **Over 29 years, P&NS manufacturing employment fell by 30%...**
- **…and food & drink services jobs rose by 65%.**
- **Food & drink jobs surpassed manufacturing in 2009.**
- **Today there are 2 million more food & drink workers than manufacturing workers in the US.**
- **An average food & drink worker earns 60% less than an average manufacturing worker.**

	Avg Hourly Wage	Avg Weekly Hours	Avg Weekly Wage
Manufacturing	$22.28	41.4	$922.39
Food Services & Drinking Places	$15.23	24.5	$373.14
Difference	-32%	-41%	-59.5%

The Only Sector with Net New Manufacturing Jobs is Lower Earning



Source: Bureau of Labor Statistics

- **Most manufacturing sub-sectors lost jobs from 1990 to 2019.**
- **The only growth sector (Food) is among lowest-paid.**

Oct. 2019	Emp. Change	Average Hourly Earnings	Average Weekly Hours	Average Weekly Earnings	Weekly Wage vs. Transport
Transportation Equipment	-16%	$27.30	42.9	$1171	--
Computer & Electronic Products	-35%	$25.33	40.5	$1,026	-12%
Primary Metals	-19%	$23.62	43.2	$1,020.38	-13%
Food Manufacturing	**+11%**	**$18.28**	**41.2**	**$753.14**	**-36%**

Reduced Job Quality is a Form of Under-employment

Reduced job quality, particularly in the form of reduced hours, means effective underutilization of labor itself. But it can also be responsible for fewer workers being drawn into the labor force – not because of a dearth of jobs, but because the quality of life in the jobs on offer differs little from the quality of life while not participating in the labor force (see slide 27).

The loss of a full hour of work for all P&NS jobs from 1990 to 2018 and the 2018 year-end 34 hour/week average for all P&NS jobs, translates into the unutilized worker/hour equivalent of 3.1 million jobs.

In a more extreme illustration, if the average P&NS worker in a low quality job was working for the same number of average hours as those in high quality jobs, that would translate into the additional worker/hour equivalent of 12.6 million jobs:

Average Hours/Week High Quality	38.26
Average Hours/Week Low Quality	29.98
Variance	8.28
Low Quality P&NS Jobs	x 58,044,000
"Underworked Hours"	480,604,320
Divided by High Quality Hours/Week	38.26
Unutilized Worker-Hours in Equivalent Jobs	12,561,535

Source: Bureau of Labor Statistics

Movement in the JQI Correlates with, or is Reflective of, Other Economic, Historical and Financial Market Phenomena

The JQI paper compares changes in the index to changes in the following metrics, with the objective of demonstrating correlations and suggesting areas for additional research on both correlations and causation:

- **The U.S. Balance of Trade – Particularly in Goods**
- **Long-term U.S. Sovereign Debt Interest Rates**
- **Domestic Productivity and Capacity Utilization**
- **U.S. Non-residential Fixed Investment Patterns**
- **"Phillips Curve" Relationships Between Unemployment and Inflation Rates**
- **Other Historical Endogenous and Exogenous Factors**

The JQI and the U.S. Balance of Trade

The JQI and the U.S. trade deficit—unsurprisingly—correlate closely, except for the 2000-2010 period household credit bubble that led to the Great Recession (more about that on slide 24).

Source: Bureau pf Economic Analysis and JQI

The relationship between goods producing jobs and job quality as measured by the JQI is even more evident in the trade balance in goods only, since 2008 and the beginning of the recession.

Source: Bureau pf Economic Analysis and JQI

Long-term U.S. Sovereign Debt Interest Rates

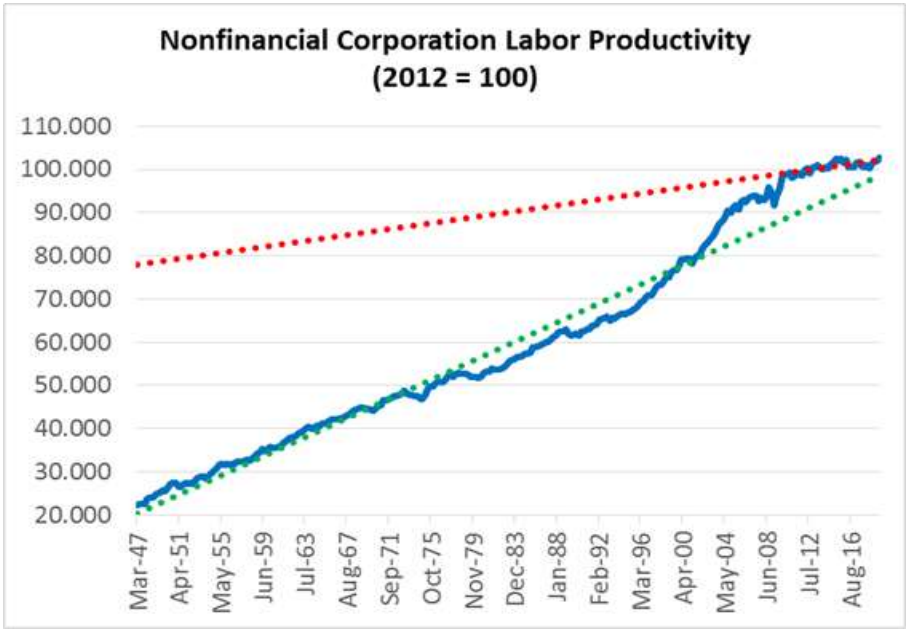
Interest rates for U.S. Treasury securities are one of the most consistent medium- to long-term indicators of economic strength and inflation expectations. The relationship between the JQI and yields on the 10 year U.S. Treasury is striking—shown here on a three month lagged basis:

During the period from approximately 2003 to date, directional changes in the JQI, on a three month lagged basis, precede similar directional changes in the bond market.

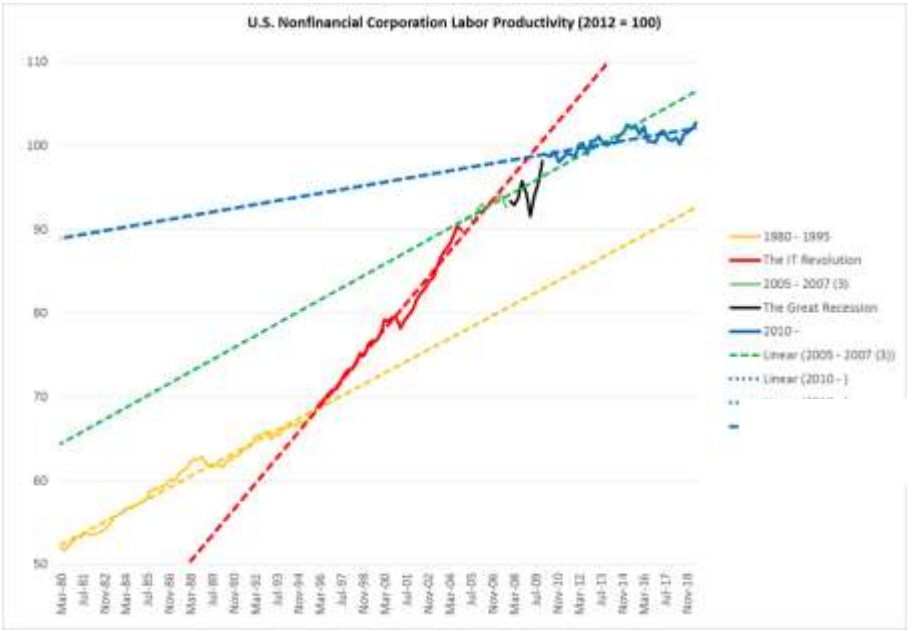
Source: U.S. Treasury Department and JQI

Domestic Productivity and Capacity Utilization

Since the Great Recession, non-financial corporate labor productivity growth has suffered the greatest decline in U.S. post-WWII history.



Source: Bureau pf Labor Statistics



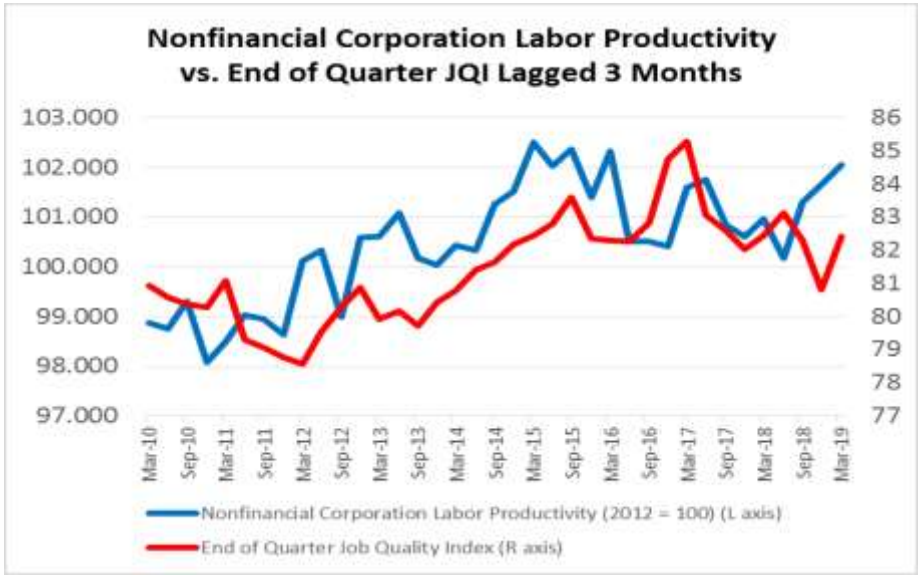
Source: Bureau pf Labor Statistics

We believe that the rotation from more highly productive goods producing jobs to less productive service sector jobs (masked to some extent in the late 1990s and early 2000s by the IT boom and by the following household credit bubble) has contributed significantly to this decline in productivity growth.

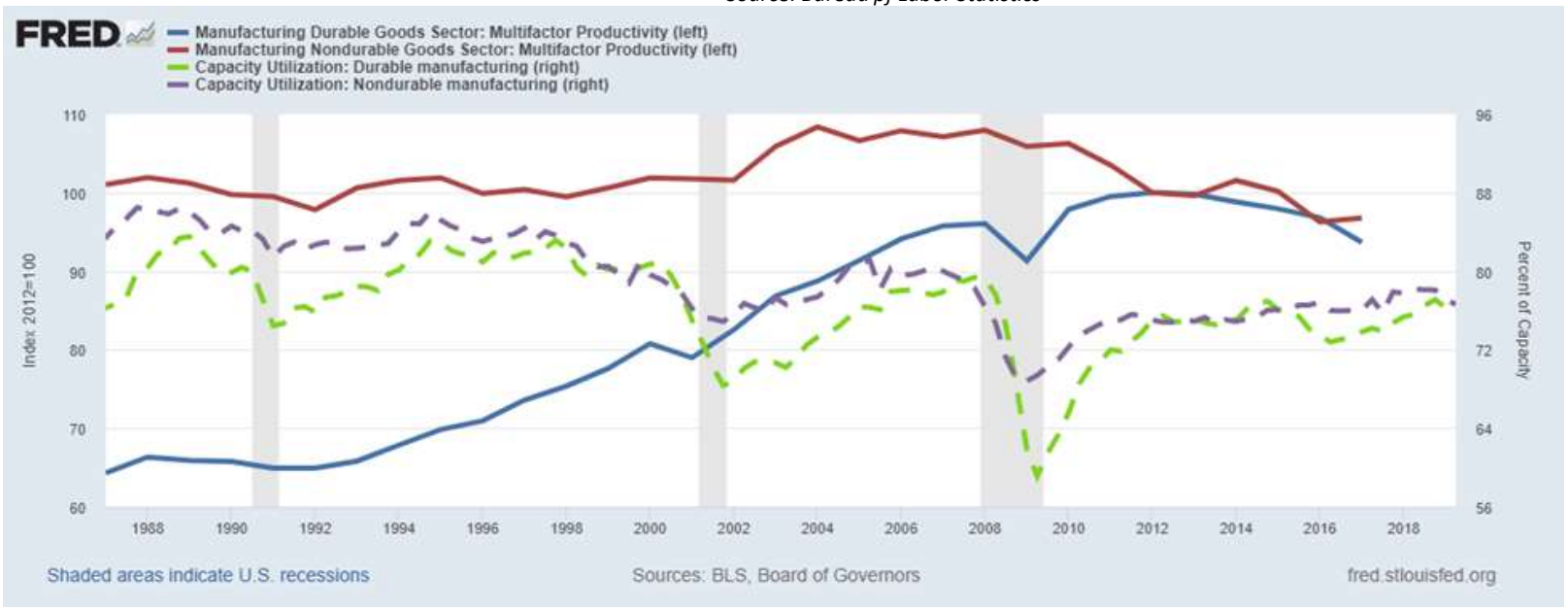
Domestic Productivity and Capacity Utilization (cont'd)

Since the Great Recession, movements in the three month lagged JQI have tracked those of non-financial corporate labor productivity.

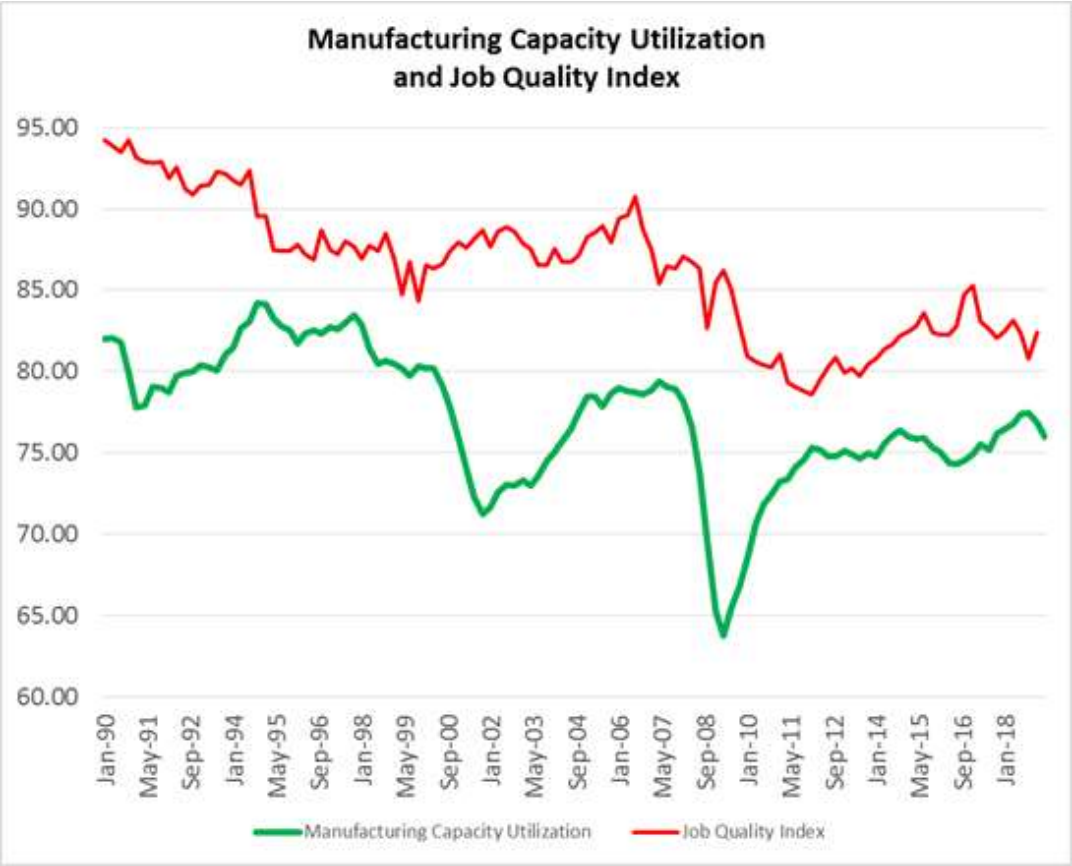
Multifactor productivity and capacity utilization have also suffered unprecedented declines or stalls.



Source: Bureau pf Labor Statistics



Domestic Productivity and Capacity Utilization (cont'd)

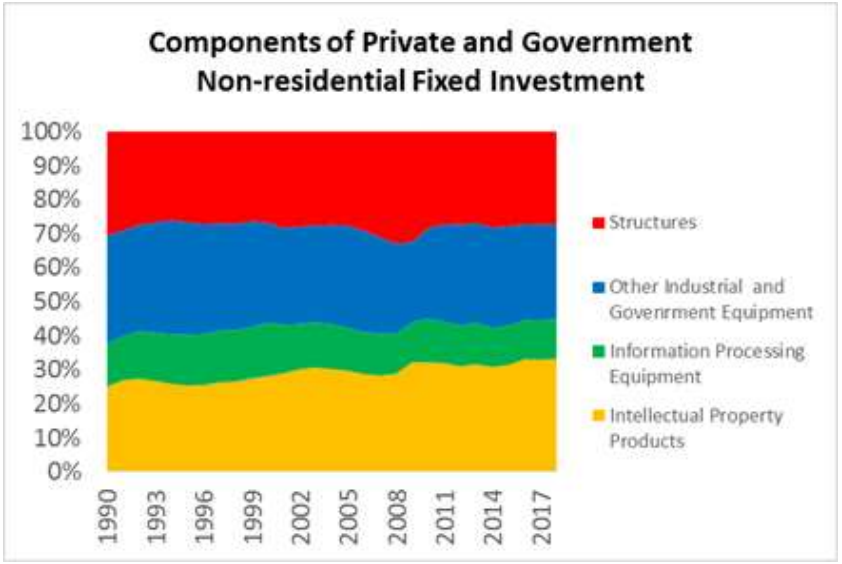


Source: Bureau pf Labor Statistics and JQI

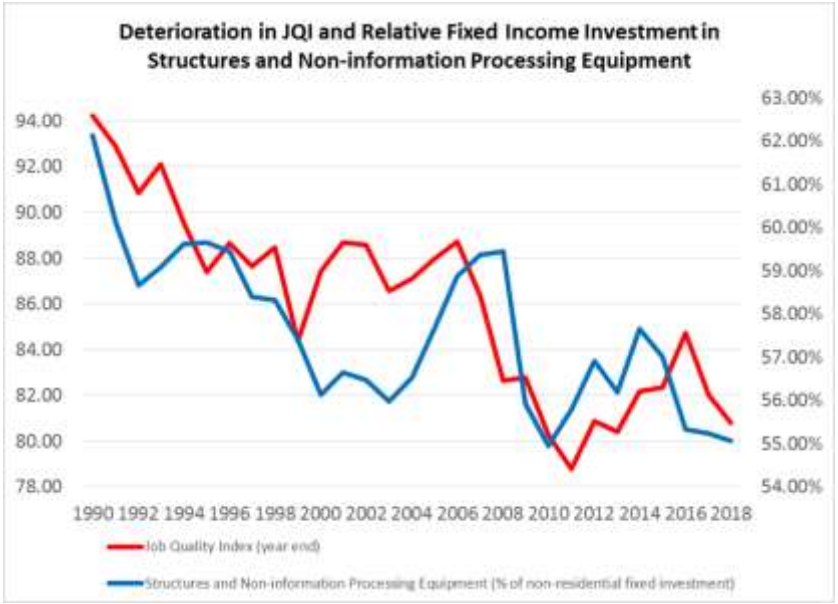
It is likely that the underutilized assets in the manufacturing sector, as evidenced by lower capacity utilization, are a major driver of the <u>multifactor</u> productivity stalls/declines, and related to declines in the JQI.

U.S. Non-residential Fixed Asset Investment

Viewed in the aggregate, on both a nominal and real basis, U.S. non-residential investment in fixed assets has recovered modestly since the Great Recession. But its components have changed materially, with less invested in structures and general industrial equipment that drives the creation of higher-wage/higher hours jobs. This relative decline closely parallels the decline in the JQI (see slide 24 for a discussion of the 2000 – 2006 period).



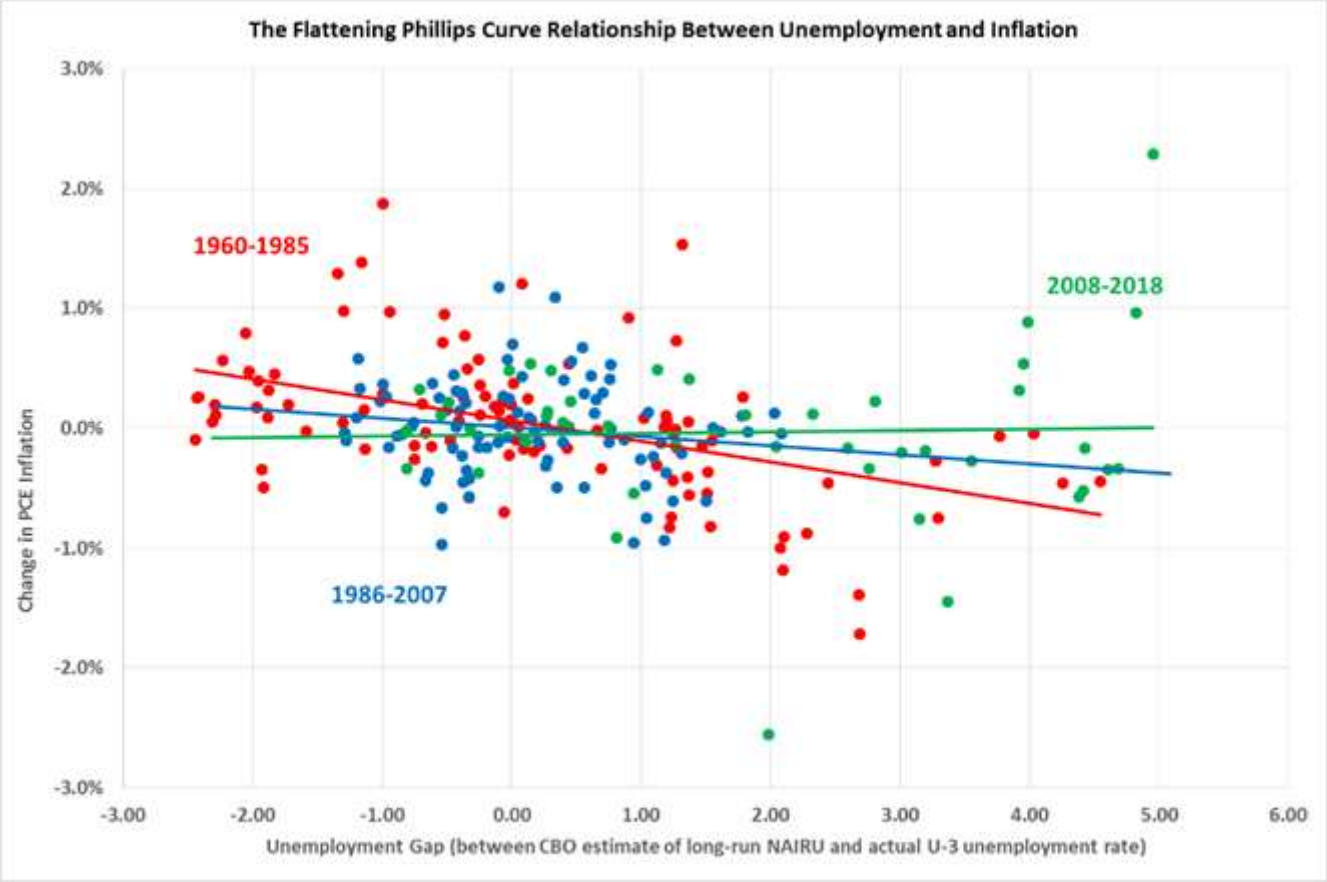
Source: Bureau pf Economic Analysis and, below, JQI



The Riddle of the Non-responsive Phillips Curve

Finally, the declining job quality, as measured by the JQI, is at least partially responsible for the apparent paradox of historically low unemployment coexisting with low wage and price inflation.

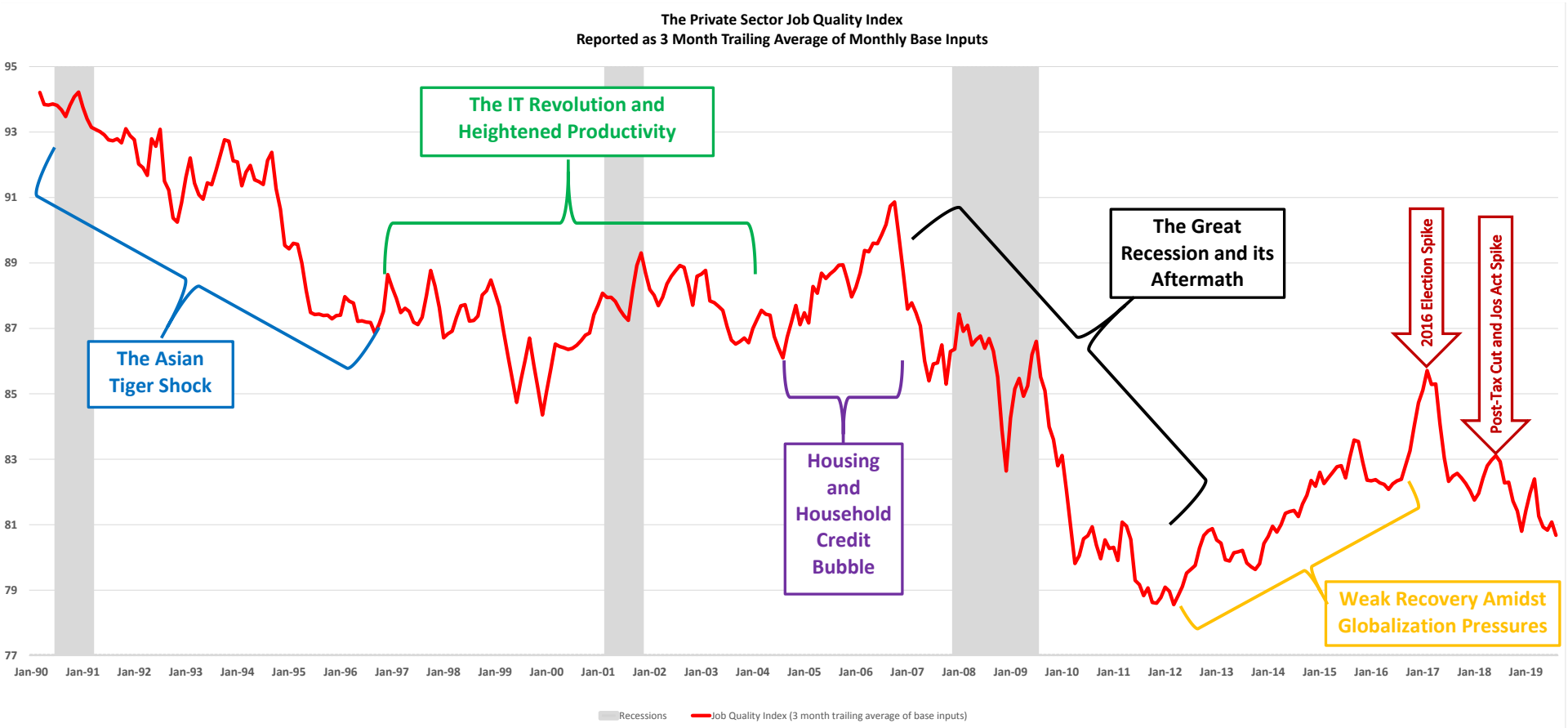
This progressively flattening Phillips Curve strongly suggests that the unemployment rate is not itself a sufficient measure of the likelihood of future wage and price inflation, especially when the mix of jobs in the economy is changing materially.



Source: Ng, Wessel and Sheiner https://www.brookings.edu/blog/up-front/2018/08/21/the-hutchins-center-explains-the-phillips-curve/ *(used with permission)*

The JQI Annotated for Exogenous and Endogenous Factors

Movements in the JQI also show the influence of specific large scale events affecting the U.S. economy.

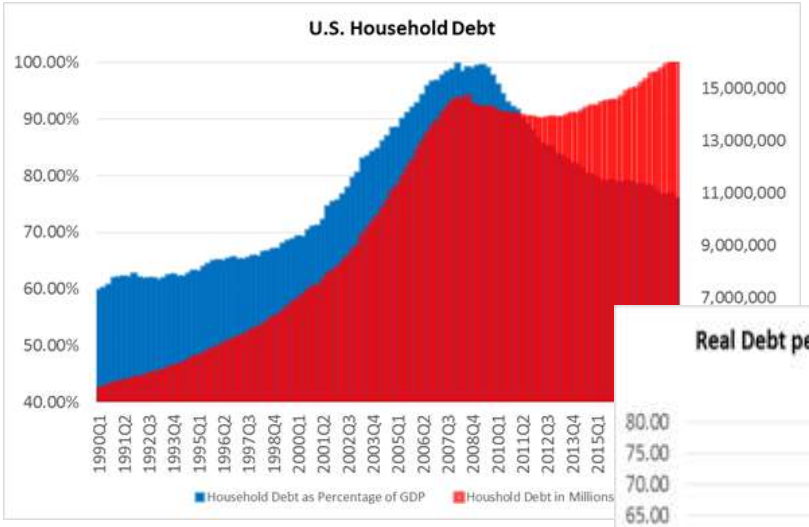


Source: The Cornell-CPA U.S. Private Sector Job Quality Index

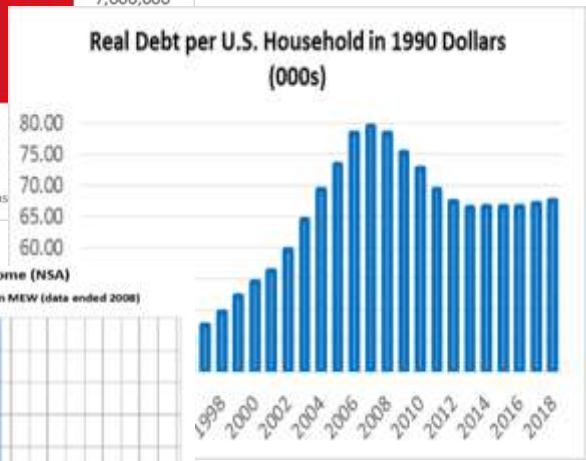
The Housing and Household Credit Bubble of the 2000s

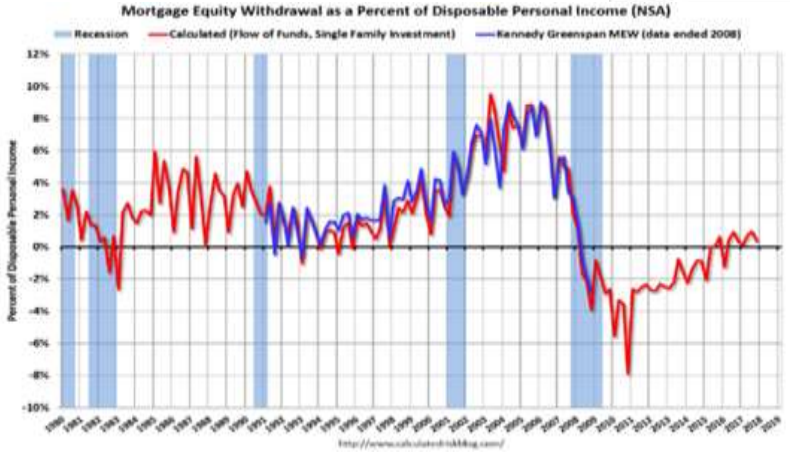
The JQI spikes materially during the first six to seven years of the 2000s, diverging from its trend before and after that period.

We believe this is almost entirely due to the creation of high quality jobs in construction, real estate services, finance, wholesale, retail, distribution and transportation sectors fueled by the unsustainable growth in home prices, household credit and mortgage equity withdrawals during the bubble. Which jobs subsequently disappeared in the ensuing crash and recession.



Source: Federal Reserve Board of Governors and authors' calculations



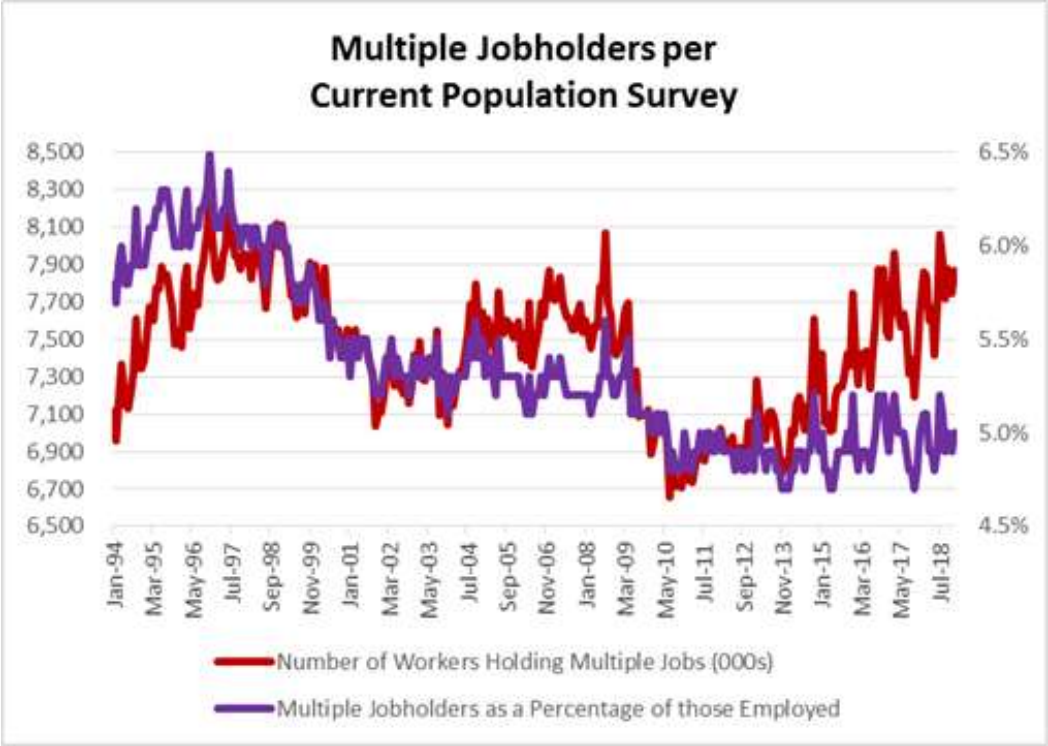


Factors that Have Minimal Effects on Job Quality

JQI Project research shows that the following secular shifts in the U.S. economy are not significant factors in the overall decline in the quality of private sector jobs:

- **Multiple job holding (including "Gig Economy") effects**
- **Greater reliance on self-employment**
- **Demographic shifts in the labor force and participation**

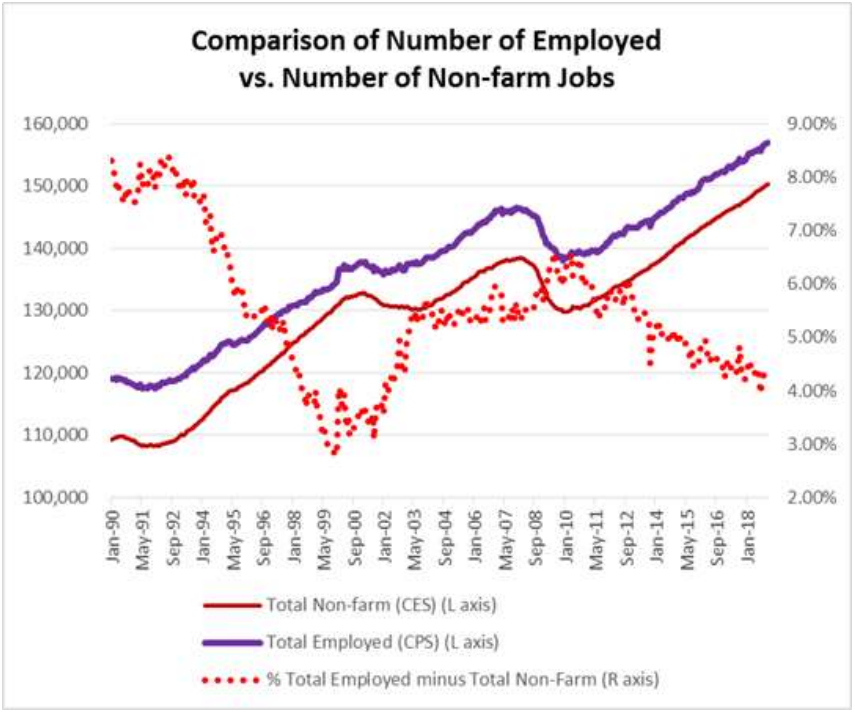
As to multiple job holding, the evidence does not support an increase in multiple jobholders as a percentage of those employed. To the contrary, the BLS' Current Population Survey (CPS) shows that the U.S. is near a low point for multiple job holding. The jobs reflected in the CES are, in the vast majority of cases, the only jobs of the holders thereof.



Source: Bureau pf Labor Statistics

Factors that Have Minimal Effects on Job Quality (cont'd)

There are approximately 15 million loosely-defined "self-employed" workers in the U.S. But 40% of that total are employed in self-owned incorporated businesses (which generally employ others as well). In fact, the self-employment rate (excluding incorporated businesses) has declined over the past decades and is heavily concentrated among older workers.



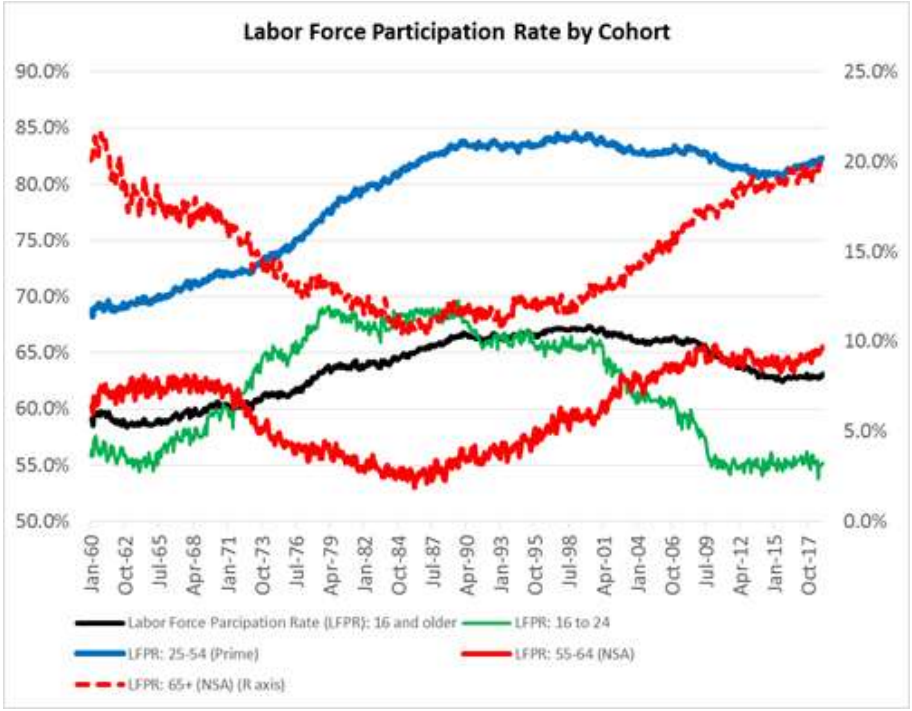
Source: Bureau pf Labor Statistics

To double-check the BLS estimates, as well as address possible dependence on agricultural, household and unpaid family work, the JQI team calculated the variance between the number of workers counted as employed under the CPS and the number of non-farm jobs at establishments in the CES (to eliminate establishment owner/employees among other things). The differential as a percentage of total employed is actually near multi-decade lows, demonstrating that the vast preponderance of Americans depend on third-party employment for their livelihoods.

Factors that Have Minimal Effects on Job Quality (cont'd)

The stubborn decline in the Labor Force Participation Rate (LFPR) in the present century is frequently chalked up to the aging of the U.S. population, and that is a significant factor. But the JQI and related data indicate that an increasing number of jobs on offer provide incomes below the "reservation wages" at which a worker would be willing to accept a particular type of job.

This can be seen by the failure of the 16 – 24 year-old, and prime aged 25 – 54 year-old labor cohort LFPR to return to their peak levels of the 1990s, after women entered the labor force in large numbers, even as the size of those two cohorts have declined markedly as a percentage of the population (in the case of the prime aged group, from nearly 58% to 49% of the population).



Source: Bureau pf Labor Statistics

Conclusion

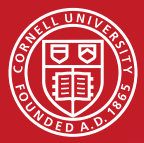
- **In 1970, the U.S. had 17.8 million manufacturing jobs. In 1990, 17.7 million.**

- **By 2010, manufacturing employment was 11.5 million, down a shocking 33.2%. Since 2010, the figure has crept up only marginally, reaching 12.8 million in May 2019.**

- **In 1970, manufacturing workers accounted for 22.6% of total U.S. workers. But, given population growth, as of May 2019 they accounted for just 8.2% of the total.**

- **As we built the U.S. Private Sector Job Quality Index®, we explored the shifting composition of the U.S. workforce to see if we could measure the economic fates of the millions who have left manufacturing and we demonstrated that lost manufacturing jobs were chiefly replaced by lower-wage/lower-hours service jobs.**

- **The trend, sadly, continues – not just replacing goods-producing jobs, but also higher quality service jobs, with more low quality jobs. The JQI will be there to monitor this situation every month.**



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The U.S. Private Sector Job Quality Index

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