

W. Frank Barton School of Business

# Center for Economic Development and Business Research

## 2017 Kansas & Wichita Age-Reweighted Employment-Population Ratio and Labor Force Participation Rate



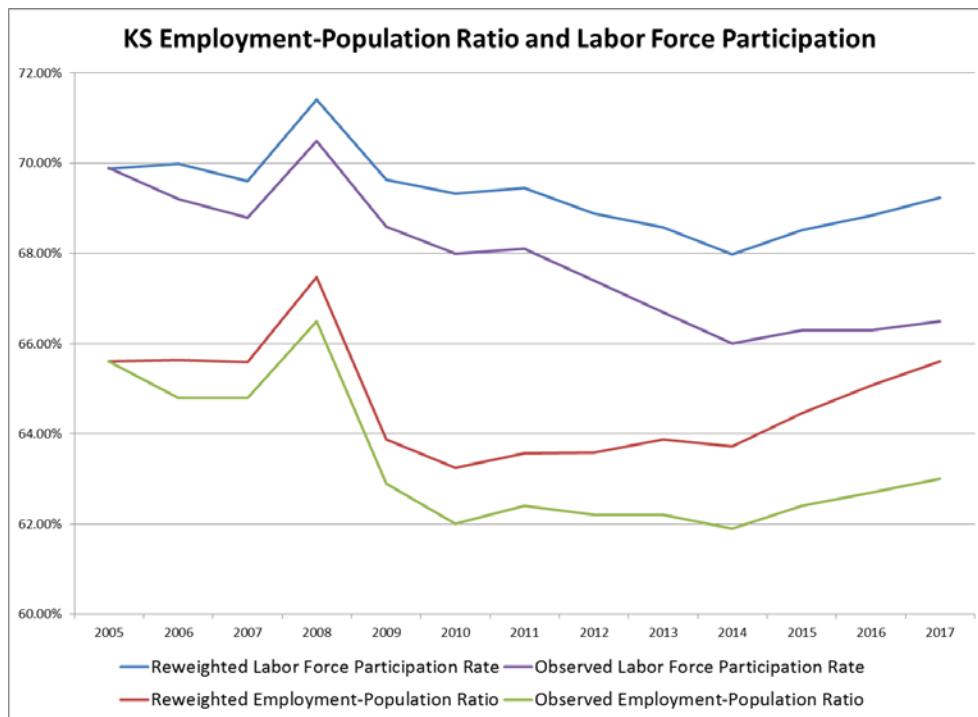
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In Kansas, the labor force participation (LFP) rate declined 4.5 percentage points from 2008 to 2014 and, in 2017, remained four percentage points below its 2008 peak. Kansas' employment-population ratio has followed a similar trend, with its 2017 employment-population ratio 2.5 percentage points lower than the 2008 peak. Nationally, both the LFP rate and employment-population ratio declined during the 2008 recession and continued to decline slowly through 2016. In this article, CEDBR will investigate how an aging workforce has affected the labor force participation rate and employment-ratio in Kansas, the Wichita metropolitan statistical area<sup>1</sup>, and the U.S. An age-reweighted LFP rate and employment-population ratio are constructed using the age distribution in each geography from 2005 to estimate to what extent their declines can be attributed to the aging of the workforce.

### Key Findings

- The aging of the workforce is estimated to have led to up to 2.6 percentage points of the decline in the Kansas labor force participation rate and employment-population ratio from 2005 to 2017.
- In the Wichita metropolitan area, workforce aging can be attributed up to 3 percentage points of the decline in the LFP rate and employment-population ratio from 2005 to 2017.
- In the Wichita MSA and the state of Kansas in 2017, even after accounting for the changing age distribution, the LFP rates were one and two percentage points lower than 2005, respectively.
- Nationally, in 2017, the age-adjusted LFP rate and employment-population ratio exceeded their 2005 levels, while the actual LFP rate and employment-population ratio remained more than 1.5 percentage points lower than their 2005 levels.

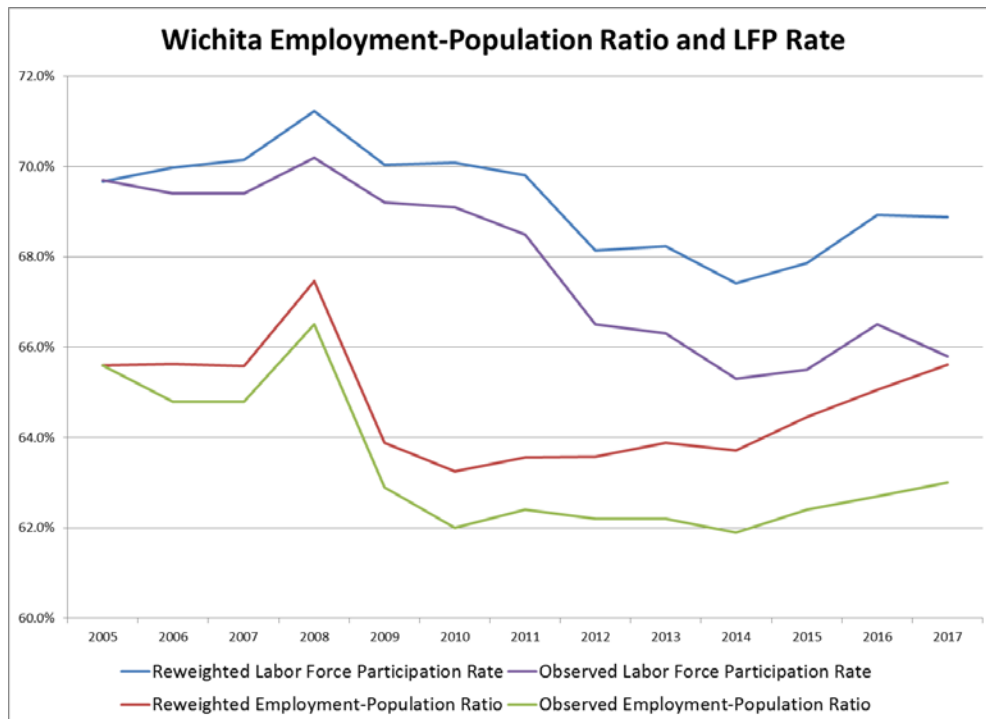


<sup>1</sup> The Wichita, Kansas, metropolitan statistical area (MSA) includes five counties: Sedgwick County, Butler County, Harvey County, Kingman County, and Sumner County.

In 2017, the employment-population ratio in Kansas increased by 0.3 percentage points; the ratio reached its nadir in 2014 after declining 4.5 percentage points from its peak in 2008. The Kansas LFP rate followed similar trends, also declining 4.5 percentage points from 2008 to 2014 and then increasing 0.5 percentage points from 2014 to 2017.

After reweighting the LFP rate and employment-population ratio to the historical age distribution, the reweighted LFP and employment-population ratio in Kansas declined less from 2008 to 2014 and increased more rapidly from 2014 to 2017. The reweighted LFP rate declined 4.4 percentage points from 2008 to 2014 and then increased 1.2 percentage points from 2014 to 2017. In 2017 the reweighted LFP rate was only 0.8 percentage points lower than the 2005 LFP rate, while the observed Kansas LFP rate had declined 3.7 percentage points in that time. This suggests that, in 2017, the LFP rate could have been up to 2.9 percentage points higher if the Kansas age distribution had not shifted at all from 2005 to 2017.

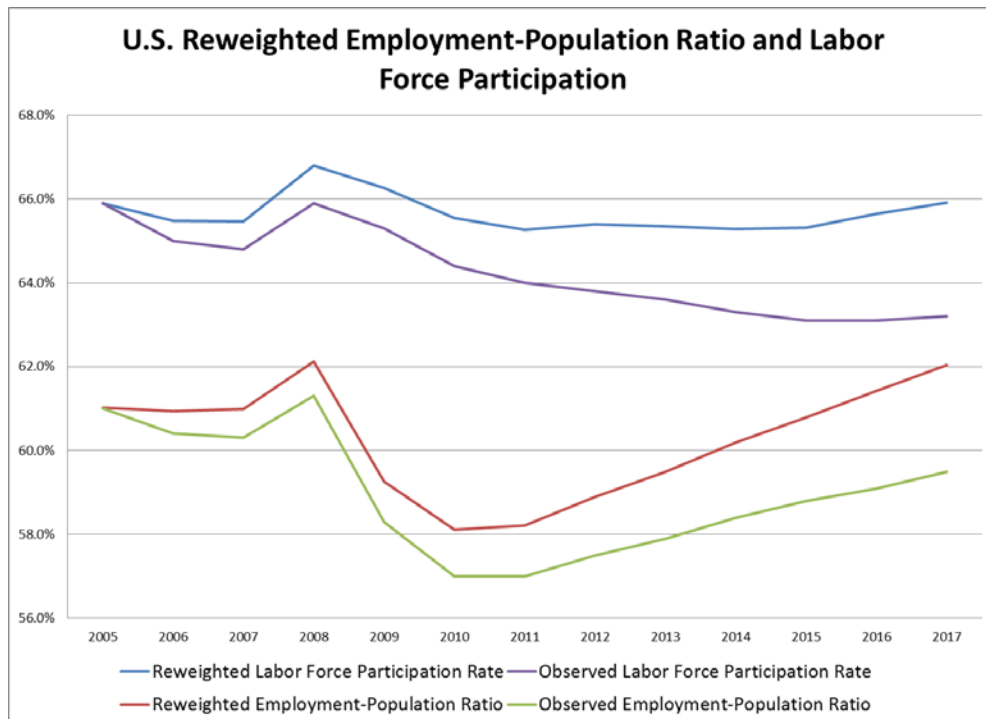
Similarly, the reweighted employment-population ratio for Kansas declined 3.7 percentage points from 2008 to 2014, followed by a 1.9 percentage point increase from 2014 to 2017. Overall, the reweighted employment-population ratio was at the same level in 2017 as it was in 2005, while the observed employment-population ratio declined 2.6 percentage points over that time period. This suggests that the employment-population ratio for Kansas could have been up to 2.6 percentage points higher in 2017 if the Kansas workforce had the same age distribution as it did in 2005.



Historically, the Wichita metropolitan area has had slightly lower LFP rate and employment-population ratio than the state of Kansas, due to slightly lower labor force participation for workers aged 25 and older in the Wichita area than the statewide average. Wichita's LFP rate declined by more than the state average from 2008 to 2014, a decrease of 4.9 percentage points, while Wichita's employment-population rate declined by 4.7 percentage points in the same time period. Since 2014, both Wichita's LFP rate and employment-population ratio have increased by 0.5 percentage points.

After reweighting to the 2005 age distribution, both Wichita's LFP rate and employment-population ratio in 2017 are near their 2005 levels. The reweighted LFP rate declined 3.8 percentage points from 2008 to 2014, and then recovered 1.5 percentage points from 2014 to 2017. While Wichita's observed 2017 LFP rate was 3.9 percentage points lower than its 2005 level, the age-reweighted LFP rate was only 0.8 percentage points lower in 2017 compared to 2005. This suggests that up to 3.1 percentage points of the decline in the LFP rate in this time period could be attributed to the aging of the Wichita workforce.

The employment-population ratio followed a similar pattern, declining 3.7 percentage points from 2008 to 2014 and then recovering 1.5 percentage points from 2014 to 2017. Wichita's observed 2017 employment-population ratio was 61.8 percent, a 2.4 percentage point decline from 2005, but the age-reweighted employment-population ratio was 0.5 percentage points higher in 2017 than it was in 2005. This indicates that Wichita's employment-population ratio could be up to 2.9 percentage points higher in 2017 if the age distribution in the metropolitan area had not changed since 2005.



Historically, the LFP rate for the United States as a whole has been lower than the LFP rates for Kansas and Wichita, due in part to higher labor force participation among 16 to 25 year olds in Kansas and Wichita relative to the national average. Since the 2008 recession, the observed national LFP rate declined each year through 2016, a decrease of 2.8 percentage points over that time. In 2017, the national LFP rate increased for the first time in a decade, with an increase of 0.1 percentage points. The employment-population ratio also declined following the 2008 recession, and in 2017 remained 1.8 percentage points below the 2008 peak.

In 2017, the age-reweighted national LFP rate returned to its 2005 level, after experiencing a decline from 2008 to 2014. The age-reweighted national employment-population ratio increased in 2017 to approximately equal to its 2008 peak after it had declined sharply from 2008 to 2010. These results suggest that up to 2.7 percentage points of the decline in the national LFP rate, and up to 2.5 percentage points of the decline in the national employment-population ratio, can be attributed to the aging of the national workforce.

This indicates that the national workforce may have been less affected by aging than either Kansas' or Wichita's, due to the smaller gap between the observed and reweighted LFP rates nationally. Even adjusting for that difference in aging, Kansas and Wichita appear to have had weaker expansions after the 2008 recession than the national average. The national employment-population ratio returned to its 2008 peak in 2017, but, for Kansas and Wichita, their employment-population ratios remained 1.9 percentage points and 1.8 percentage points below their 2008 peaks, respectively.

## **Methodology**

The employment-population ratio is calculated as the fraction of population 16 and over that is currently employed. This measure of economic health provides a broader perspective than the unemployment rate, which only measures the fraction of those workers in the labor force who are unemployed and actively looking for work. Following the 2008 recession, there have been concerns that relying solely on the unemployment rate as a measure of labor market health overestimates the strength of the labor market due to its exclusion of discouraged workers, who are workers currently without any employment who are not actively looking for work. The employment-population ratio includes such workers; when a worker loses their job, regardless of if they are actively looking for new employment, the employment-population ratio is reduced while they are jobless.

The labor force participation rate is measured similarly to the employment-population ratio, except that it includes both employed workers and unemployed workers actively looking for work, divided by the total population aged 16 and over.

As the population ages, we would expect both the employment-population ratio and the labor force participation rate to decline somewhat, due to older citizens, especially those of retirement age, being less likely to be employed or participate in the labor force. From 2005 to 2017, median age rose from 36.4 to 38.1 years in the U.S., and from 36.1 to 36.7 years in the state of Kansas<sup>2</sup>. Over the same period,

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<sup>2</sup> All data in this article is from the U.S. Census Bureau's American Community Survey's one year estimates.

the fraction of the population 65 years old or older increased 3.5 percentage points in the U.S. and 3 percentage points in Kansas.

To estimate the effects that the aging of the population has had on the employment-population ratio and the labor force participation rate, the employment-population ratio and labor force participation rate was calculated for each age-cohort for each year from 2005 to 2017. Then, using those age-cohort employment-population ratios and labor force participation rates, the population age distribution was held constant at 2005 levels to simulate what the overall employment-population ratio and labor force participation rates would have been if the population had not aged, but the age-cohort employment ratios and labor force participation rates still varied.

This reweighting of the employment-population ratio and labor force participation rate provides an estimate as to the effects of aging on those ratios. However, if the age distribution had remained constant over the last decade instead of varying, it is likely that the age-cohort employment-population ratios would have responded to that change by behaving differently, most likely by declining more than they actually did during the 2008 recession. The reweighted employment-population ratios and labor force participation rates are best thought of as an estimate of the upper limit of the effect of aging on those rates, as it is unlikely that prime-age worker's age-cohort employment-population ratio would have increased if there were more prime-aged workers in a given year.