



# Update on the Earnings of New Hires in Manufacturing

## Executive Summary

This report, which updates analyses we published in 2013 and 2014, finds that the manufacturing sector continues to offer a pay premium relative to other industries. Although this pay premium fluctuates with the business cycle, it has persisted over time for both new hires and incumbent workers, providing evidence that the manufacturing sector continues to offer good jobs for workers.

By  
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Specific findings in this update include:

- Using the most recent available data, we find that, in the first quarter of 2016, average monthly earnings were almost 21 percent higher in manufacturing than in other industries, and the average monthly earnings of newly hired workers were 35 percent higher in manufacturing.
- The earnings premium for new hires tends to be counter-cyclical. In the years prior to the recession, earnings of new hires in manufacturing were 32 percent higher on average than new hires' earnings in other industries. The premium increased during the last recession, peaking at over 44 percent in 2010, but declined during the recovery and has leveled out at roughly 35 percent in recent years.
- When compared to workers with more tenure, new hires in manufacturing have fared relatively well. As of the first quarter of 2016, the average earnings of new hires in manufacturing were about 66 percent of the average earnings of incumbents in manufacturing. In contrast, for non-manufacturing, new hires earned about 58 percent of what incumbents earned. This 8-point gap has persisted since 2012.

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## Introduction

As manufacturing output and exports have recovered since the recession, employment in manufacturing has grown as well. However, concerns remain whether this growth is providing well-paying jobs. In a previous analysis, the Office of the Chief Economist (OCE) used the U.S. Census Bureau's National Quarterly Workforce Indicators (QWI) and found that new hires in the manufacturing sector earned

more than new hires in other industries and that the gap between new hires' earnings and incumbent workers' earnings was lower in manufacturing.<sup>1</sup> In this study, we provide an update to this earlier analysis.

The QWI include counts and average monthly earnings for “stable” employees (those employed for at least a full quarter) and “stable” new hires (those who worked for at least a full quarter but who did not work for that employer in any of the four prior quarters). Following the approach of OCE’s previous report, these data are used to derive the number of “stable” incumbent employees (that is, stable employees who are not new hires) and their average earnings. Further, incumbents and new hires are separated according to whether their employers are in the manufacturing sector. This allows for an examination of the earnings of new hires in manufacturing over time, relative to incumbents and relative to new hires in other industries. The ability to focus on new hires provides some information about “new jobs” in manufacturing compared to other industries, although it is not possible to determine the types of occupations of these workers nor whether the new hires filled new openings or replaced workers who quit or otherwise separated.

Findings for the first quarter of 2000 through the first quarter of 2016, the latest available quarter with earnings data, are included here.<sup>2</sup> To adjust for seasonal variation, 4-quarter moving averages are used.

#### The National Quarterly Workforce Indicators

A 2013 study from the Office of the Chief Economist (OCE) (and a 2014 update) used state-level Quarterly Workforce Indicators (QWI) data to analyze the earnings of new hires and incumbent workers in both manufacturing and non-manufacturing industries. The QWI data is a unique database derived from state unemployment insurance systems and other data sources that links an individual worker with an employer to provide job histories over time. Earnings histories are developed from quarterly reports of worker earnings provided by the employer under the state unemployment insurance systems.

In the previous OCE work, data compiled from a panel of 34 states with consistent data from 2000 through 2011 showed that new hires in the manufacturing sector earned more than new hires in other industries. Since the publication of the 2013 study, the Census Bureau has released a new data product that aggregates the state QWI data and provides nationally representative QWI estimates.

This National QWI dataset obviates the need in the previous study to aggregate separate state QWI data and therefore eliminates the need to focus on a narrow subset of states with specified data availability. Therefore, this update uses the National QWI data on earnings of new hires and incumbent workers to compare manufacturing to non-manufacturing industries since 2000—providing new information about trends through early 2016. Although the results from this update are quite consistent with OCE’s previous analysis, they are not strictly comparable to the previous results based on selected state-level data.

<sup>1</sup> Powers, Regina and Langdon, David S. Office of the Chief Economist, Economics and Statistics Administration, U.S. Department of Commerce. (August 2013). The Earnings of New Hires in Manufacturing (ESA Issue Brief # 02-13). Retrieved from [www.esa.gov/reports/earnings-new-hires-manufacturing](http://www.esa.gov/reports/earnings-new-hires-manufacturing). See also Powers, Regina and Noonan, Ryan. Office of the Chief Economist, Economics and Statistics Administration, U.S. Department of Commerce. (February 10, 2014). Earnings of New Hires in Manufacturing: Wage Benefits Continue. Retrieved from [www.esa.gov/economic-briefings/earnings-new-hires-manufacturing-wage-benefits-continue](http://www.esa.gov/economic-briefings/earnings-new-hires-manufacturing-wage-benefits-continue).

<sup>2</sup> This analysis uses the latest available version of the National QWI, version R2017Q2, released in the second quarter of 2017. This version provides employment data through the second quarter of 2016 and earnings data through the first quarter of 2016.

## Findings

### Earnings of New Hires

In the first quarter of 2016, the average monthly earnings of new hires were 35 percent higher in manufacturing than in other industries. For the manufacturing workforce as a whole, including both new hires and incumbents, earnings were almost 21 percent higher in manufacturing than in other industries. These results are consistent with OCE's previous analysis, which showed for 2011 a manufacturing earnings premium of 38 percent for new hires and 25 percent for the workforce as a whole.<sup>3</sup> Note that this earnings premium can reflect differences between the manufacturing sector and other industries in terms of hourly earnings and hours of work per month. However, the QWI data do not provide information on hours worked or hourly wages to examine these differences.

Figure 1 illustrates the earnings premium for new hires in manufacturing, calculated as the difference between the average earnings of new hires in manufacturing and that of new hires in other industries, as a share of average earnings of new hires in other industries. In the years prior to the recession, earnings of new hires in manufacturing were 32 percent higher on average than new hires' earnings in other industries. The premium began to increase at the beginning of the recession in 2008, peaking at over 44 percent in 2010.<sup>4</sup> The premium declined beginning in 2010 but remained above its pre-recession level, standing at 35 percent as of the first quarter of 2016.

Figure 2 shows the earnings premium for new hires in manufacturing relative to other industries, along with the rate of new hires in manufacturing, calculated as the number of new hires as a share of total employment in manufacturing. As the rate of new hires declined during the recent recessions, the earnings premium increased, illustrating a counter-cyclical pattern for the earnings of new hires in manufacturing. Over the course of the recession, the nominal average earnings of new hires in manufacturing increased by 9 percent, compared to a 2 percent increase in earnings of hires in other industries. Over the same time, the number of new hires in manufacturing declined by almost 30 percent, while the number of new hires in other industries declined by 15 percent. One explanation is that, as employers in all industries hired fewer workers during the recession, those workers who were hired were more skilled or worked more hours, and this shift toward more highly skilled hires or hires with more work hours was more pronounced in the manufacturing sector.

In the years since the recession, the number of hires in manufacturing rebounded significantly between 2010 and 2012 and has rebounded by about 11 percent between the first quarter of 2012 and the first quarter of 2016, compared to a 21 percent increase in the number of hires in other industries. The hires rate in manufacturing has hovered around 5 percent in recent years.

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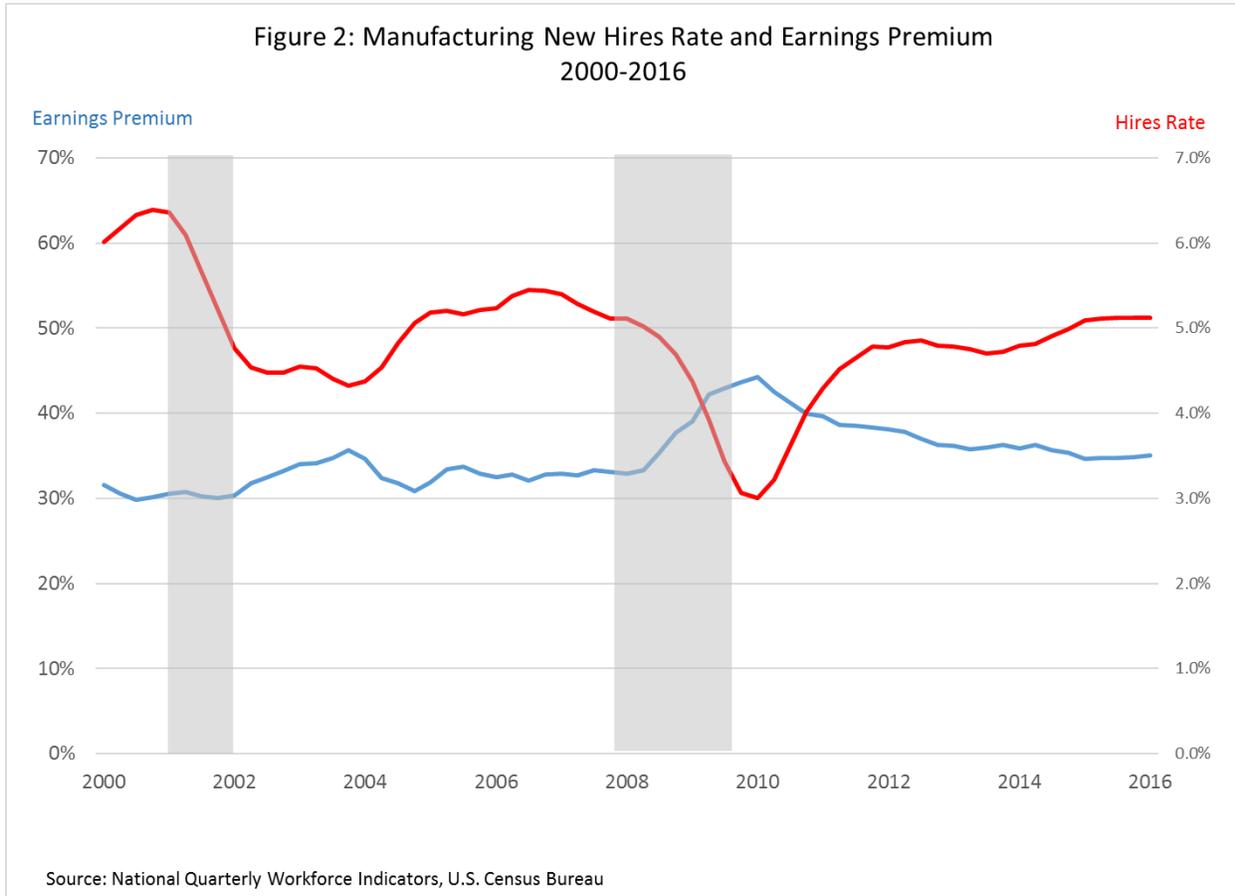
<sup>3</sup> An OCE update using 2012 data also reported an earnings premium of 38 percent for new hires in manufacturing but did not report the premium for the overall manufacturing workforce.

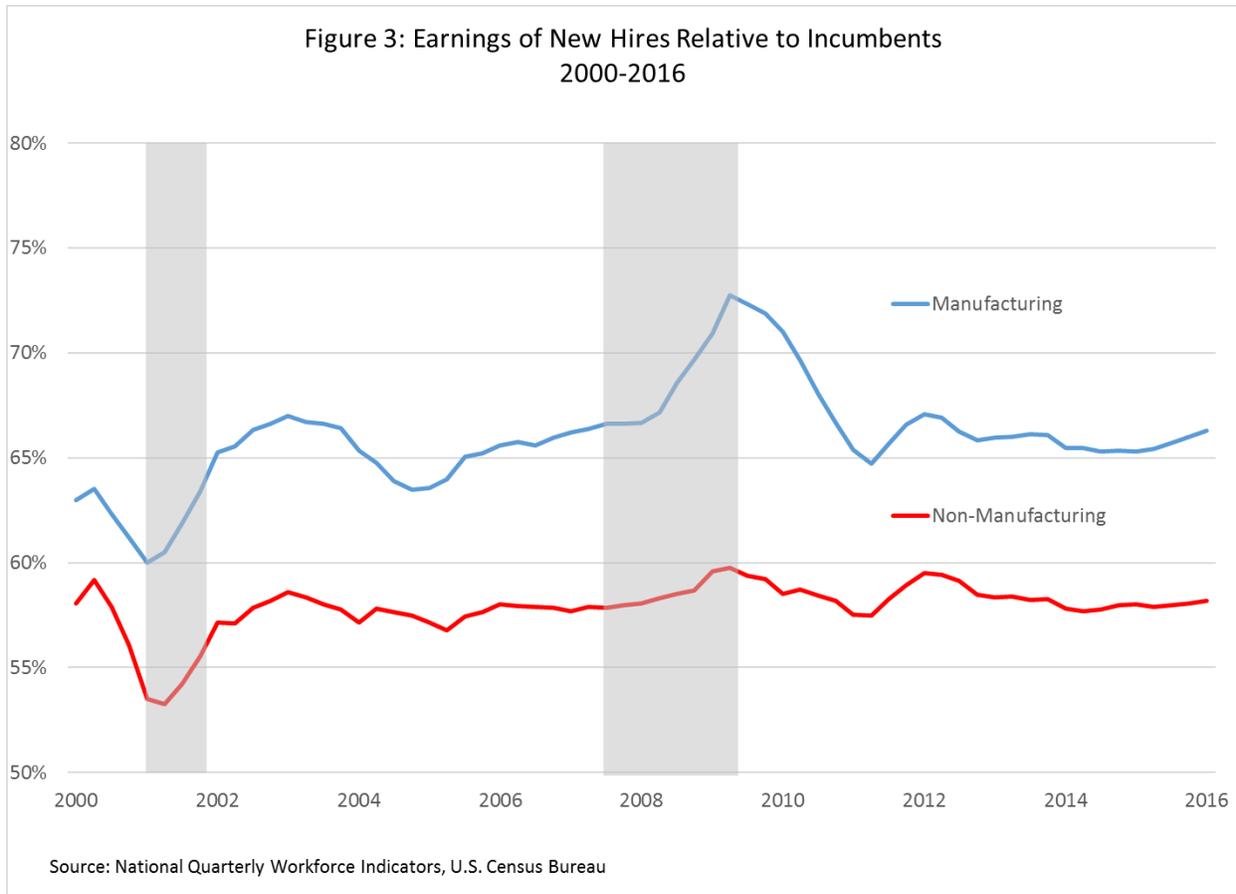
<sup>4</sup> The last recession as identified by the NBER began in the fourth quarter of 2007 and persisted through the second quarter of 2009.



## Earnings of New Hires and Incumbent Workers

Figure 3 shows the trend in earnings of new hires relative to incumbents in both manufacturing and non-manufacturing, indicating how new hires have fared relative to their counterparts with more tenure. As of the first quarter of 2016, the average earnings of new hires in manufacturing were about 66 percent of the average earnings of incumbents in manufacturing. In contrast, for non-manufacturing, the earnings of new hires stood at about 58 percent of the average earnings of incumbents, an 8-point gap. The 2013 OCE study also found an 8-point gap at the end of 2011, and, as Figure 3 shows, this gap has persisted since 2012.





## Recent Changes in Real Earnings

Both new hires and incumbents in manufacturing tend to earn more than their counterparts in other industries, and Figure 4, which shows average monthly earnings in 2010 dollars for both new hires and incumbents in manufacturing and in non-manufacturing, suggests that this trend has persisted over many years. More recently, however, earnings in non-manufacturing have increased at a faster pace than have earnings in manufacturing. For example, between the first quarter of 2014 and the first quarter of 2016, real monthly earnings were 3.6 percent higher for incumbent workers in manufacturing, compared to 4.9 percent for incumbents in other industries. Real monthly earnings for new hires in manufacturing were 4.9 percent higher in the first quarter of 2016 compared to 2014, while real earnings for new hires in other industries were 5.5 percent higher. (See Figure 5.) While these differences are small, a continuation of this trend would reduce the pay premium enjoyed by manufacturing workers.

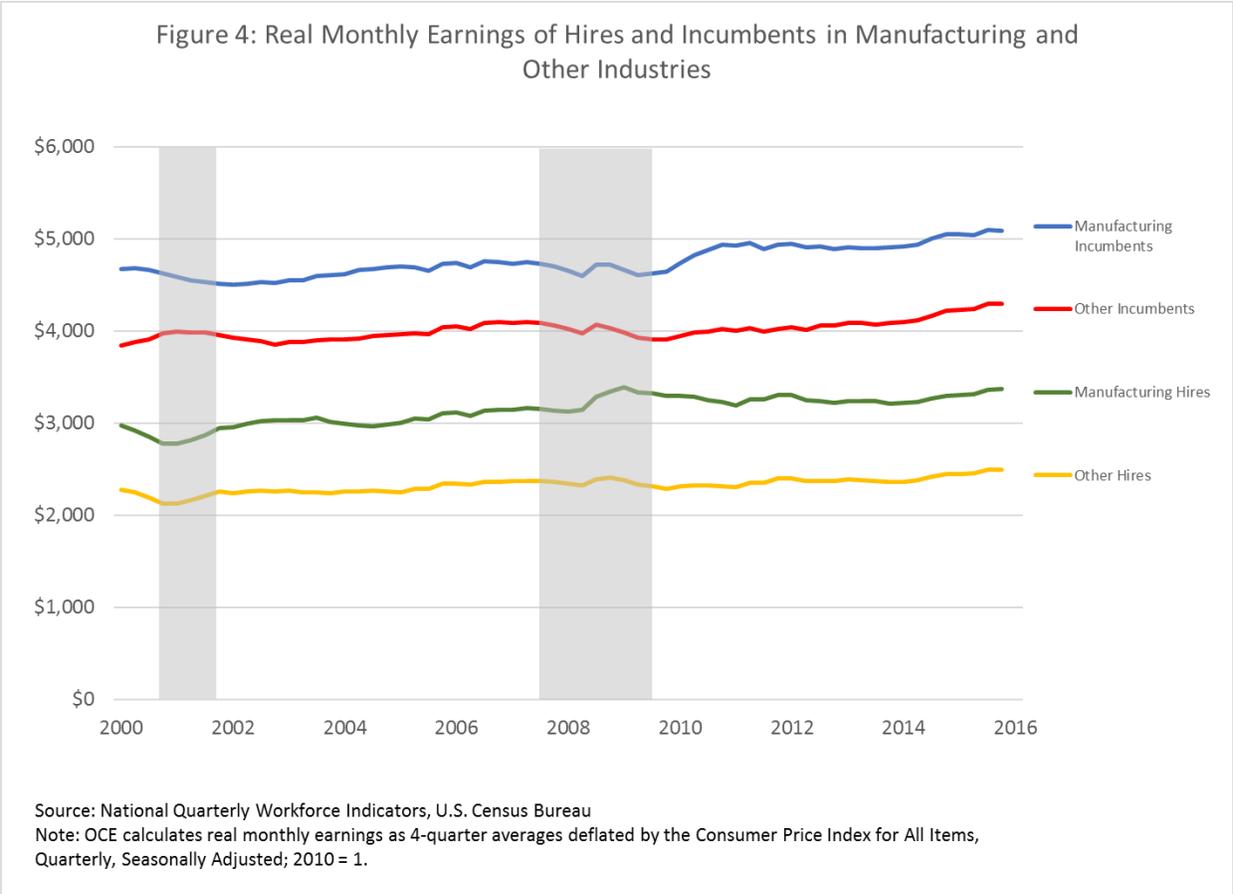
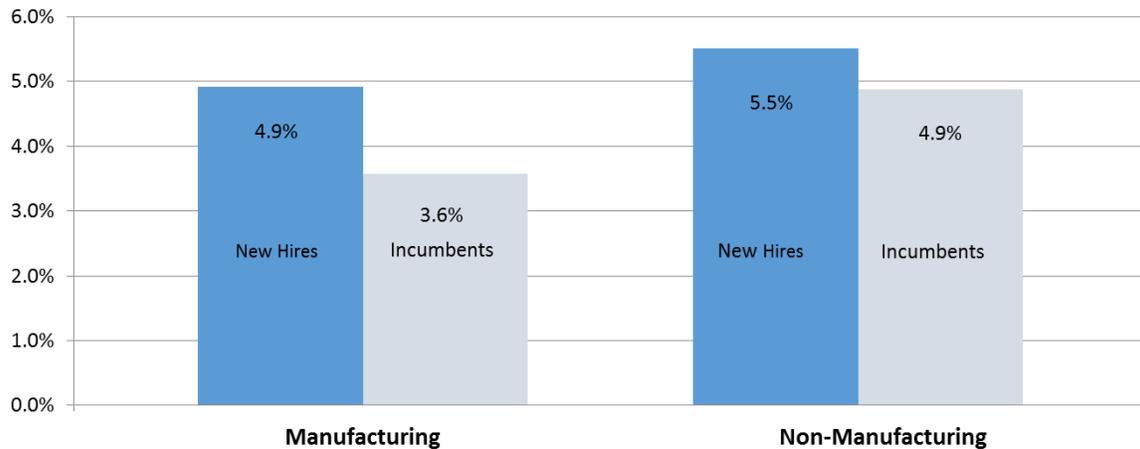


Figure 5: Changes in Real Earnings for New Hires and Incumbents  
2014-2016



Source: Source: National Quarterly Workforce Indicators, U.S. Census Bureau  
 Note: OCE calculates real monthly earnings as 4-quarter averages adjusted using the Consumer Price Index for All Items, Quarterly, NSA, 2010=1. Changes are calculated between Q1 2014 and Q1 2016.

## Conclusion

Using the latest nationally representative QWI data, a relatively new source of data on workers and their earnings released in 2015, we find that our previous result—that new hires in the manufacturing sector fare better than new hires in other industries—has continued to be true. The latest QWI data suggest that both hiring of stable workers in manufacturing and the earnings of those new hires have been relatively strong in recent years, confirming the notion that manufacturing continues to offer good jobs. Still, although manufacturing continues to offer higher monthly earnings to new hires and to incumbent workers compared to other industries, in recent years, real earnings have shown smaller increases in manufacturing compared to other industries. If such trends persist, the pay premium enjoyed by workers in manufacturing may narrow, impacting the reputation for manufacturing jobs as good jobs.

## Acknowledgments

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