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U.S. Department of Labor
U.S. Bureau of Labor Statistics
Office of Employment and Unemployment Statistics

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Working Paper 493
January 2017

All views expressed in this paper are those of the authors and do not necessarily reflect the views or policies of the U.S. Bureau of Labor Statistics.

Manufacturers' Outsourcing to Temporary Help Services: A Research Update*

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December 2016

U.S. manufacturers make extensive use of temporary help services (THS). Although temporary help workers typically work at the client's worksite, side-by-side direct-hire employees, they are legally the employees of the temporary help agencies and are counted in the temporary help industry in official employment statistics. Information on the number of temporary help workers, along with other types of contract workers, assigned to manufacturing and other industries is not systematically collected.

In earlier work, we used data from several BLS household and establishment surveys to estimate the number of temporary help workers assigned to manufacturing from 1989 to 2009.¹ We also estimated the effects of manufacturers' outsourcing to temporary help services on measured labor productivity in that sector. This research brief updates selected estimates in that paper through 2015.

Imputing temporary help workers to manufacturing

Our imputations are based on data from the Occupational Employment Statistics (OES) program, the Contingent Worker Supplements (CWS) to the Current Population Survey (CPS), the monthly Current Population Survey, and the Current Employment Statistics (CES) program. The OES, which surveys about 400,000 establishments a year, provides detailed information on the occupational distribution of employment by industry. We use OES data benchmarked to employment levels from the CES to estimate the number of employees by occupation for the manufacturing sector and for the temporary help services industry. Because of changes in occupational classifications, we limit our analysis to the period 2003 through 2015 in this note.

The monthly CPS collects information on workers' occupation and the CWS, which was conducted as a supplement to the CPS five times between 1995 and 2005, asks workers if they were paid by a temporary help agency and, if so, the industry of the client to whom they were assigned. We used this information to impute temporary help workers to manufacturing in each of 18 mutually exclusive and exhaustive occupations.²

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¹ Matthew Dey, Susan Houseman and Anne Polivka). "[Manufacturers' Outsourcing to Staffing Services.](#)" *Industrial and Labor Relations Review* 65(3): 533–559. July 2012.

² Specifically, we applied an average of the share of temporary help workers in a particular occupation who reported being assigned to manufacturing in the five CWS's to annual OES estimates of the number of temporary help workers by occupation to generate annual estimates of the number of temporary help workers assigned to manufacturing. The share of temporary help workers by occupation that reported being assigned to manufacturing varies little across the 10-year period during which the CWS was conducted, and our earlier work showed that our

The share of nonfarm payroll employment in the temporary help industry fluctuates with the business cycle, declining during recessions and rising during upturns. But that share has displayed no secular trend since 2000, measuring about 2 percent of nonfarm payroll employment in 2000, 2005 and 2015. Prior research shows that the temporary help industry accounted for a growing share of blue-collar occupations in the 1990s, and we find this trend continued in the 2000s. In 2003, 4.6 percent of all production workers and 13.4 percent of all low-skilled manual workers (helpers, laborers and hand-material movers) were employed in the temporary help industry; by 2015 that share had risen to 7.3 and 17.9 percent, respectively, according to OES data (Figure 1).

While CWS survey data show that manufacturing establishments utilize temporary help agencies to staff a wide variety of occupations, manufacturers' use is especially great in these blue-collar occupational categories. Production occupations constitute the core occupations in manufacturing, and the manufacturing sector continues to account for over 70 percent of all production workers in the economy. Not surprisingly, CWS data indicate that manufacturers are the primary clients for temporary help production workers, accounting for about 85 percent of these workers between 1995 and 2005. In the past, manufacturers have also made heavy use of temporary workers in helper, laborer and hand material mover occupations, accounting for about half of temporary help workers in these occupations.

If the pattern of temporary help use over the 1995 to 2005 period is representative of use during the 2006 to 2015 period, then the data indicate that both the number and share of temporary help workers in manufacturing have continued to expand. While the number of employees in the manufacturing sector declined by about three quarters of a million workers between 2007 and 2015, under the assumption that the patterns of use evident in the past have persisted, the number of temporary help workers assigned to manufacturing rose by about a quarter of a million. Our estimates indicate that by 2015 about 1.2 million temporary help workers were assigned to manufacturing establishments, adding nearly 10 percent to the manufacturing labor force (Table 1).

Effects of temporary help employment on manufacturing labor productivity

Labor productivity is defined as output per worker hour. Although several output concepts can be used for productivity measurement, official manufacturing labor productivity statistics published by the Bureau of Labor Statistics define output as the value of manufacturing shipments less the shipments from one domestic manufacturer to another, adjusted for inflation. As discussed in our earlier paper, the outsourcing of tasks to any entity other than a domestic manufacturer will result in a mechanical increase in measured labor productivity. This is because, all else the same, manufacturing shipments are unaffected by the outsourcing event, but the hours worked by the employees of the manufacturing establishments fall as purchased services for contract labor increase. For example, if a manufacturer increases its use of

estimates using an average of the shares across the five CWS surveys produced very similar results to using CWS estimates from the proximate year. Further details on data and methodology are provided in that paper. The CWS will be administered in May of 2017 for the first time since 2005.

temporary help assembly-line workers and reduces its use of direct-hire assembly-line workers, measured labor productivity for any given level of shipments will mechanically increase, even if the total number of hours worked (direct-hire plus agency temps) is unchanged. The Bureau of Labor Statistics has long recognized this potential effect of outsourcing on its labor productivity numbers; BLS produces an annual measure of multifactor productivity that captures the inputs of both labor hours and purchased services and that consequently is not mechanically affected by outsourcing.³

Labor productivity measures will be affected by outsourcing when the hours worked by contract workers are expanding or shrinking relative to direct-hire workers. Thus, labor productivity measures will be inflated if there is a trend increase in the relative hours worked by contractors. Use of contractors may also systematically affect labor productivity measures over the business cycle. In the case of the temporary help industry, it is well known that agency workers bear the brunt of labor adjustment during recessions. When workforce reductions are necessary, firms typically first layoff their agency staff. Conversely, during expansions, particularly during the initial stages of an expansion, firms often increase their workforce levels with temporary agency staff. These well-known adjustment patterns mean that use of temporary staffing depresses measured labor productivity growth during a downturn and inflates measured labor productivity growth during an upturn.

Table 2 displays estimates of the annual growth in manufacturing labor productivity over various time periods, first using published data, and then adjusting the published statistics for estimated temporary help use in manufacturing. In the top panel, the adjusted estimates assume the CWS data, which cover the 1995 to 2005 period, continue to accurately reflect assignments of temporary help workers by occupation to manufacturing through 2015. In the bottom panel, we use a conservative assumption. We continue to assume that 85 percent of temporary help workers in production occupations are assigned to manufacturing. For the other occupations, which are more widely utilized by firms in other sectors, we assume that manufactures account for only half of the utilization rate found in the 1995 to 2005 data.⁴

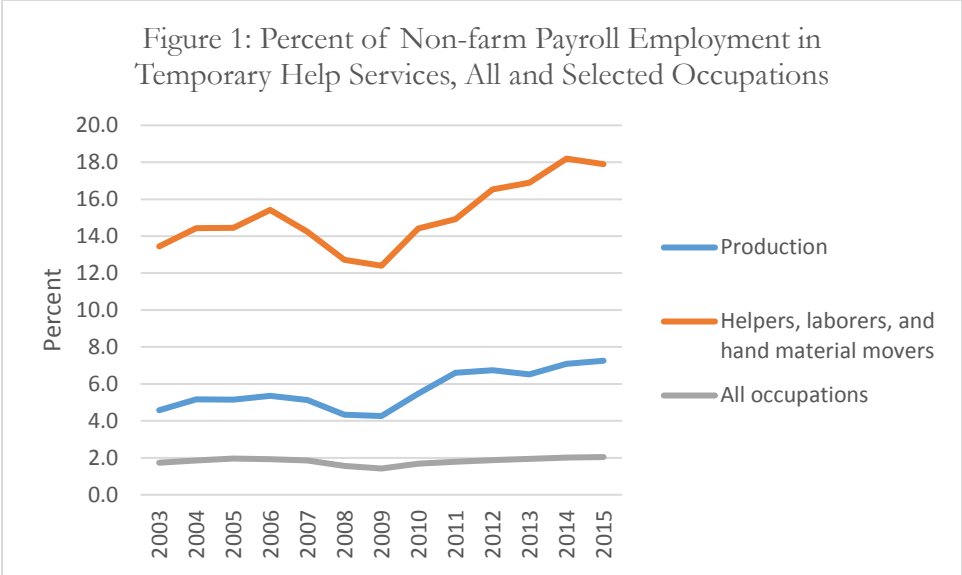
The first row in each of the panels shows annual labor productivity growth from the business cycle peak in 2007 to its trough in 2009. In official statistics, labor productivity declined at a rate of 2.0 percent per year, but because so much of the workforce adjustment occurred through the layoff of temporary agency workers, we estimate that, all else the same, the decline in labor productivity was overstated by 0.46 percentage points (by 23 percent), or with our more conservative estimates by 0.33 percentage points (by 16 percent). During the expansion, in contrast, manufacturers disproportionately hired temporary help workers to handle the greater workloads, and so it appeared that manufacturers were accommodating the increased shipments with relatively few hires. Between 2009, the recession trough, and 2012, we estimate that, all else the same, labor productivity growth would have been 0.76 percentage points lower (about 15

³ The BLS uses the sectoral output concept (value of shipments less intra-sectoral shipments) for both its quarterly labor productivity and annual multifactor productivity measures in manufacturing. The BLS is conducting research on producing productivity measures using alternative output concepts, including value added. Use of a value-added concept for labor productivity measures would remove the mechanical relationship between a change in outsourcing and labor productivity growth.

⁴ As in our earlier paper, we use data on hours worked, by occupation, from the November CPS to adjust for differences in the average hours worked by manufacturing and temporary help workers.

percent lower), or with our more conservative estimates 0.57 percentage points lower (about 11 percent lower) had the hours of temporary agency workers been factored into the calculation. Since 2012, measured labor productivity growth has been near zero, and it would have been slightly negative had the hours of temporary agency staff been taken into account. From the last business cycle peak in 2007 through 2015, we estimate that accounting for temporary agency work would have lowered measured labor productivity by 0.2 to 0.3 percentage points, or by 15 to 20 percent.

We emphasize that these adjustments only estimate the effects on labor productivity measures of manufacturers' outsourcing to temporary help services. They do not account for possible effects of other domestic outsourcing or offshore outsourcing.



Source: Authors' calculations using OES and CES data

Table 1: Estimates of the Assignment of Temporary Help Workers to Manufacturing

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Number of workers assigned to mfg (1000s)	871	967	972	1,015	969	783	672	837	950	1,034	1,068	1,150	1,194
Temporary help as a percent of direct-hire employees	6.1	6.8	6.9	7.2	7.0	6.0	5.8	7.2	8.1	8.7	8.8	9.4	9.7

Source: Authors' calculations.

Table 2: The Effect of Manufacturers' Outsourcing to THS on Measured Labor Productivity Growth*

	annual labor productivity growth	annual labor productivity growth, adjusted for THS	Difference (adjusted- unadjusted)	Percent difference
<i>Estimates based on imputations of THS to mfg using 1995-2005 CWS</i>				
2007-09	-2.00	-1.54	0.46	23.18
2009-12	5.00	4.24	-0.76	-15.12
2009-15	2.59	2.03	-0.56	-21.45
2007-15	1.42	1.13	-0.29	-20.59
<i>Conservative estimates**</i>				
2007-09	-2.00	-1.68	0.33	16.31
2009-12	5.00	4.42	-0.57	-11.46
2009-15	2.59	2.18	-0.41	-15.79
2007-15	1.42	1.20	-0.22	-15.41

*Labor productivity is measured for the 4th quarter of the year to correspond with the timing of the OES survey.

**These estimates assume that the share of workers in production occupations assigned to manufacturing is the same as in the CWS data. For other occupations, we assume the share assigned to manufacturing is half of that in the 1995 to 2005 CWS data.