



Nonresidential building construction overhead and profit markups: an update

By Derek T. Wasilewski

In 2014, the Bureau of Labor Statistics (BLS) published a **Beyond the Numbers** article titled [Examining trends in the nonresidential building construction PPIs](#). The article looked at the published Producer Price Indexes (PPIs) for nonresidential building construction in the context of the broader economy. A key feature was a newly developed research index for contractor markup. This new markup index was intended to isolate and make public a measure of the overhead and profit data that BLS collects on a monthly basis as part of calculating its nonresidential building construction PPIs.¹ The index has now been updated with new data through December 2017.

Regularly published BLS construction series

BLS publishes PPIs for five types of nonresidential building construction, as well as aggregate indexes by region and trade. All of these indexes measure changes in the price of construction, combining estimated material and installation costs with contractors' overhead and profit percentages reported by PPI survey respondents. BLS also publishes several PPIs that measure changes in the price of construction materials; among these are the "Inputs to Industries" indexes, created by weighting existing PPI indexes with [U.S. Bureau of Economic Analysis \(BEA\) Input-Output Accounts data](#).² In addition, BLS publishes a number of measures of construction labor costs (for example, the Employment Cost Index, hourly and weekly wages, earnings by occupation). However, BLS does not have a regular outlet for publishing changes in the overhead and profit markup that contractors charge for the work they do.

A special look at nonresidential building construction markups in the PPI

Typically, contractor markups are affected by the size and scope of a project, as well as the perceived level of risk and difficulty of the project. The PPI attempts to hold these factors constant by employing a model-based methodology according to which contractors are asked each month to estimate a bid for the same project. Markups also are affected by supply and demand, and contractors respond to changes in their markets by changing their markups. Respondents to the PPI survey often remark that markups are changing on the basis of the quantity of available work, the contractor's staffing levels, input prices, and competition from other contractors. Changes (or the absence thereof) in contractors' overhead and profit percentages are of interest because they can highlight certain market conditions that cannot be isolated by looking only at changes in price. (That is, an increase in the price of construction due to rising material or labor costs may not benefit contractors if they cannot pass enough of the increased costs onto their customers.) However, if contractors are able to increase their overhead and profit percentages, it shows that they are confident either that demand is sufficient or that competition is low enough to support the higher markup.

Building the research-based markup index

The markup index is created by taking every price for each item used in the nonresidential building construction PPIs and, for each price, dividing it by the estimated material and installation costs for that item. The resulting value gives an effective markup for the item, regardless of the specific markup the contractor actually calculates and applies. For example, some contractors charge different overhead and profit percentages on the cost of materials versus the cost of installation, while others charge a single rate based on the total cost. Still others report separate compounded percentages broken out by overhead first and then profit. These effective markups are then totaled, using the same weights and index structure as the published nonresidential building construction PPIs.

The update through December 2017

Data for the markup index have been extended from February 2014 through December 2017. In the 3 years since the publication of the previous article, the construction industry has continued its recovery from the depths of the Great Recession. The markup index increased about 8.0 percent between January 2014 and June 2015. In July 2015, the increase stalled, and for the next 12 months it struggled to continue its climb, remaining within

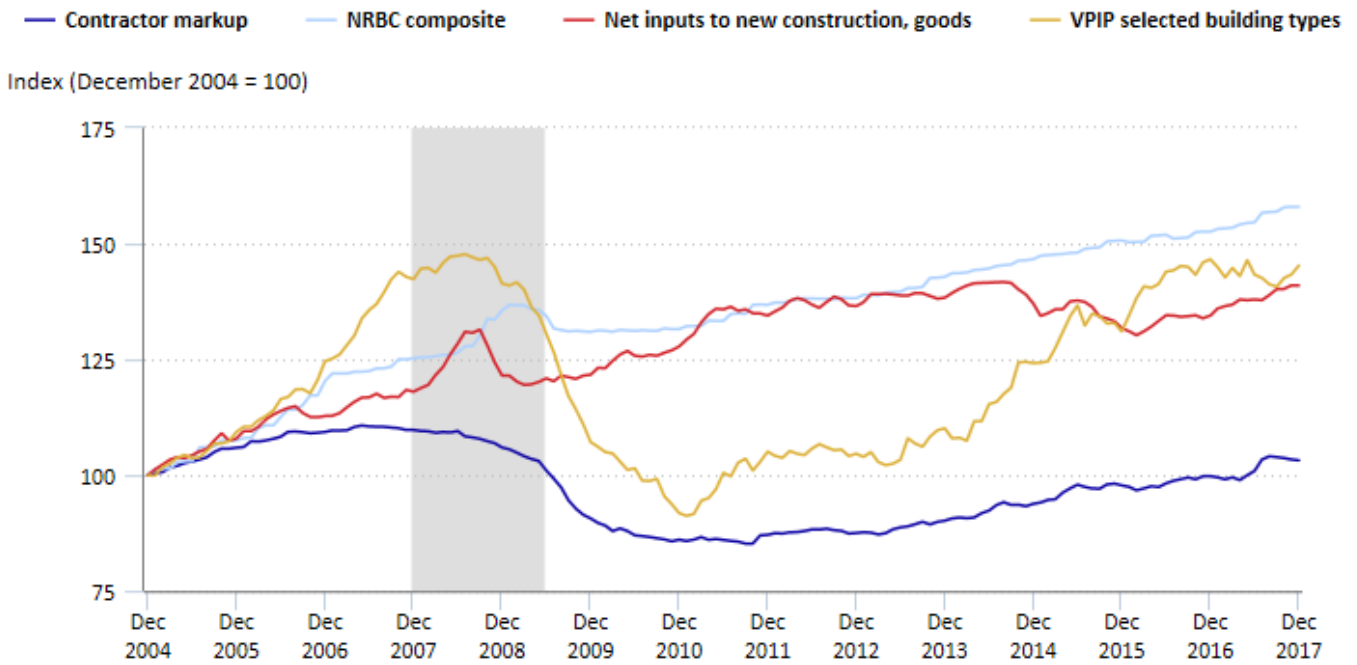
a narrow range. Between June 2015 and June 2016, the index increased only 0.3 percent. The summer of 2017 saw a sharp 4.1-percent jump from May to August. By December 2017, the index stood 21.1 percent above its September 2011 low, but still 6.8 percent below its May 2007 peak.

Meanwhile, the PPI for [Net inputs to new construction, goods, not seasonally adjusted](#) (previously coded as BNEW³) fell sharply at the end of 2014, rebounded slightly in the first half of 2015, and then continued to fall until February 2016. This drop was due, in part, to a large decline in the price of [refined petroleum products](#) over that same timeframe. The index for Inputs to new construction, goods, rose between March and June of 2016, after which it stabilized for the remainder of the year. In January 2017, the index resumed its increase and, as of December 2017, was back to its autumn 2014 level.

To get a sense of changing volumes in the nonresidential building construction sector over the February 2014 through December 2017 timeframe, we add the U.S. Census Bureau's Value Put in Place measures for office, commercial, healthcare, educational, and manufacturing construction and convert the resulting value to an index.⁴ The selection of those particular measures is made to parallel the five types of building covered by the PPI's nonresidential building construction program. The measures exclude spending on residential construction and infrastructure construction.

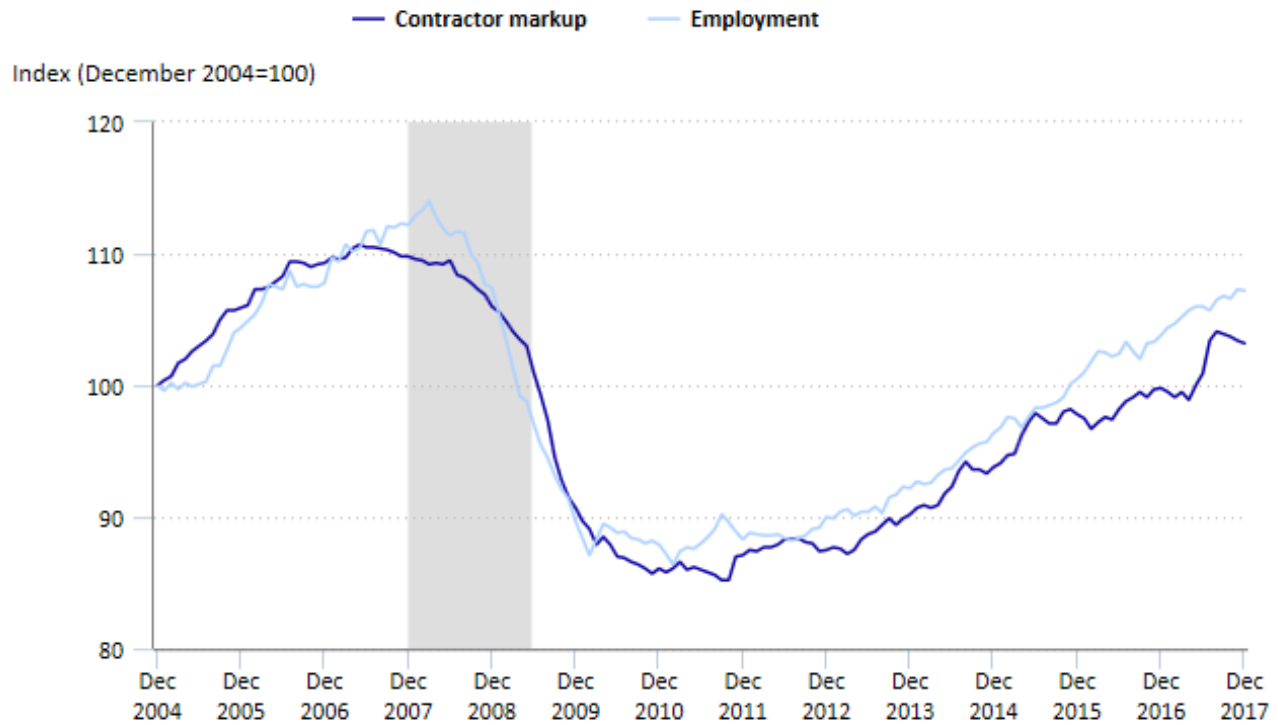
As seen in chart 1 and discussed in the 2014 article, the longer term trend in the contractor markup index generally tracks the business cycle. The recovery out of the Great Recession was slow, and companies were cautious. In 2014 and 2015, some people were wondering why this recovery had been so slow and how long it would continue.⁵ Uncertain of where they should invest, companies were stockpiling record-setting cash reserves.⁶ In the nonresidential construction sector, a few respondents to the PPI remarked that the construction sector felt stagnant and that nothing was going to change until the economy changed. Yet, over time, fears of a double-dip recession faded and caution turned to cautious optimism.⁷ Workloads increased and markups slowly followed suit. By late 2016, some PPI survey respondents remarked that they were busy and understaffed and that they were concerned about having enough workers for the amount of work available; also, they felt comfortable testing higher markups. In some instances, markups slipped back to their previous levels, but overall, firms were able to hire more workers and keep their markups at the higher rates. In chart 2, seasonally adjusted employment levels in nonresidential building construction are converted to an index, with December 2004 = 100.⁸ The chart shows that both employment and the markup index in nonresidential building construction track each other closely. The correlation coefficient between the two series is 0.96.

Chart 1. Producer Price Index (PPI) nonresidential building construction (NRBC) composite; contractor markup; net inputs to new construction, goods; and Value Put in Place (VPIP) selected building types, December 2004–December 2017



Shaded area represents a recession as determined by the National Bureau of Economic Research.
 Click legend items to change data display. Hover over chart to view data.
 Source: U.S. Bureau of Labor Statistics and U.S. Census Bureau.

Chart 2. Producer Price Index (PPI) nonresidential building construction (NRBC) contractor markup, and employment levels for the nonresidential building construction sector, December 2004–December 2017

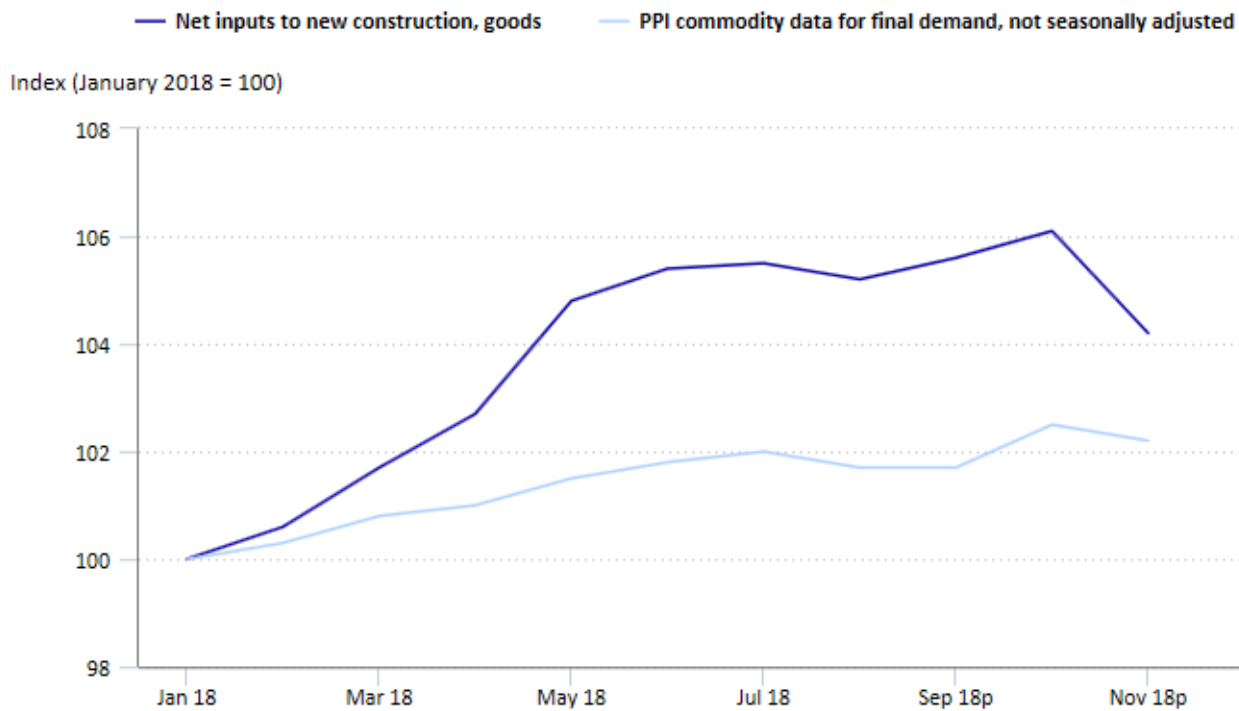


Shaded area represents a recession as determined by the National Bureau of Economic Research. Click legend items to change data display. Hover over chart to view data. Source: U.S. Bureau of Labor Statistics.

Conclusion

In December 2017, markups and employment in nonresidential building construction had not yet reached their prerecession peaks. Looking forward, the industry faces further uncertainty and challenges. Chart 3 shows that 2018 has seen prices for construction materials increasing faster than the PPI for final demand. Whether these increased material costs will mostly be passed on to building owners or included in overhead and profit remains to be seen.

Chart 3. Producer Price Index (PPI) commodity data for final demand, not seasonally adjusted; and net inputs to new construction, goods, January 2018–November 2018



p = preliminary; all indexes are subject to revision 4 months after their initial publication.
 Click legend items to change data display. Hover over chart to view data.
 Source: U.S. Bureau of Labor Statistics.

Hourly wages for construction workers have been rising faster than the average for all private employees. The construction sector is relying on an aging workforce and is struggling to attract new workers. It remains to be seen if these wage increases will cut into profit, but some respondents to the PPI survey are already remarking that raises for salaried office staff are increasing the amount of overhead they charge.

This **Beyond the Numbers** article was prepared by Derek T. Wasilewski, an economist in the Office of Prices and Living Conditions, U.S. Bureau of Labor Statistics. For more information, contact Frank Congelio at Congelio.Frank@bls.gov or (202) 691-7712.

Information in this article will be made available upon request to individuals with sensory impairments. Voice phone: (202) 691-5200. Federal Relay Service: 1-800-877-8339. This article is in the public domain and may be reproduced without permission.

RELATED ARTICLES

[Drilling deep into PPI indexes to understand regional variations in natural gas price movements](#)

[Nailing down the price of new nonresidential building construction: expanding the PPI to include indexes by region and type of contractor](#)

[Examining trends in the nonresidential building construction producer price indexes \(PPIs\)](#)**NOTES**

- ¹ “Producer Price Index (PPI) Nonresidential Building Construction Initiative” (U.S. Bureau of Labor Statistics, July 14, 2016), www.bls.gov/ppi/ppinrbc.htm.
- ² “Producer Price Indexes: Updated Inputs to Industry Producer Price Indexes, Notice” (U.S. Bureau of Labor Statistics, February 18, 2015), www.bls.gov/ppi/industryinputsintro.htm. As described in this notice, PPI uses the Supply (formerly called Make and Use) tables of the BEA Input–Output Accounts Data in creating these indexes.
- ³ Ibid.
- ⁴ “Construction Spending” (U.S. Census Bureau), www.census.gov/construction/c30/c30index.html. For a detailed presentation of the value of construction put in place effective December 2017, see “Monthly Construction Spending, December 2017,” Release Number CB18-18, table 2, page 4 (U.S. Census Bureau, February 1, 2018), www.census.gov/construction/c30/pdf/pr201712.pdf.
- ⁵ Eric S. Rosengren, “After the Great Recession, a not-so-great recovery” (Federal Reserve Bank of Boston, October 14, 2016), www.bostonfed.org/news-and-events/speeches/2016/after-the-great-recession-a-not-so-great-recovery.aspx.
- ⁶ Adam Davidson, “Why are corporations hoarding trillions?” *The New York Times Magazine*, January 20, 2016, www.nytimes.com/2016/01/24/magazine/why-are-corporations-hoarding-trillions.html.
- ⁷ Kermit Baker, “Healthy advances forecast for nonresidential building market through 2017” (The American Institute of Architects, July 25, 2016), <http://new.aia.org/articles/14861-healthy-advances-forecast-for-nonresidential-building-market-through-2017>.
- ⁸ For the original data, see the U.S. Bureau of Labor Statistics data series “Employment, Hours, and Earnings from the Current Employment Statistics survey (National),” 2008–18, extracted December 6, 2018, <https://data.bls.gov/timeseries/CES2023620001>.

SUGGESTED CITATION

Derek T. Wasilewski, “Nonresidential building construction overhead and profit markups: an update,” *Beyond the Numbers: Prices and Spending*, vol. 8, no. 1 (U.S. Bureau of Labor Statistics, January 2019), <https://www.bls.gov/opub/btn/volume-8/nonresidential-building-construction-overhead-and-profit-markups-an-update.htm>