

Changes in Construction Materials Prices, 2001-2006 (Updated August 16, 2006)

Since early 2004, the construction industry has been buffeted by a succession of steep price increases affecting a variety of materials. The attached tables document these increases, using the Bureau of Labor Statistics (BLS)'s overall consumer price index for all urban consumers (CPI-U), the producer price index (PPI) for finished goods, and the PPI for specific construction segments and inputs.

Background on PPIs

Each row shows the BLS series identifier and name for a PPI (or CPI), the percentage change in that index from December of the previous year until December 2001, 2002, 2003, 2004, and 2005, and the percentage change through the latest month from one, three, and 12 months before. Percentages are calculated by BLS and downloaded for PPIs from the PPI website, www.bls.gov/ppi, at the page for "Create Customized Tables (one screen)"; most are commodity indexes, except for new warehouse and school construction and five construction types, which are industry indexes. All of the PPIs shown are available only at a national level.

To provide consistency, "not seasonally adjusted" indexes have been selected for all items. For many of the items BLS does not post a seasonally adjusted index, either because the item shows little seasonal variation in price or there is not enough data available to calculate a seasonal adjustment. However, prices of items such as natural gas do show wide seasonal swings; for these PPIs, a large one-month or even three-month change may not be unusual.

As the name implies, the PPI for a commodity measures the price charged by a producer of that item or category of items. The index does not include any costs the buyer incurs beyond the producer's loading dock or other point of sale, such as insurance, freight, storage, fabrication, or installation. These costs are considerable for many construction inputs and may change at rates different from the PPI, but these rates cannot be estimated from PPI data. There is no PPI for construction labor, and the PPIs for trucking and insurance are not specific enough to indicate the specialized services and products used in construction. Some PPIs cover a wider range of materials than items used specifically in construction. For instance, steel mill products include steel used in motor vehicles, appliances, equipment, etc., as well as construction. Other PPIs, like those for concrete products, reflect materials used solely in construction. An industry PPI measures the costs of all items used by an industry. Readers are encouraged to scroll through the thousands of indexes on the website above and suggest other indexes to include in these tables. But note that data is not currently available for some of the indexes listed on the website, probably because too few producers submit data to BLS.

Organization of PPI Tables

The first five rows compare the CPI-U with the PPI for finished goods, the PPI for new warehouse and school construction (currently, the only PPIs for completed structures), and the PPI for materials and components for construction. The construction materials PPI is a weighted average of the PPIs for all materials used in every type of construction, including single-family homebuilding and improvements. Because the single-family market accounted for roughly half of all construction in recent years, materials used in that segment have a significant weight in the overall construction index.

The second set of indexes, "Changes in PPIs by Construction Types," shows the PPIs for different construction segments, reflecting the respective weights of materials and components used in highway and street construction, other heavy construction, nonresidential buildings, multi- and single-family new construction.

The third set includes "Changes in PPIs for Specific Construction Inputs." Items are grouped into petroleum-based products; concrete and brick products; miscellaneous materials; and metal products. Indented index names show that the item is a subset of the last unindented item above it; this relationship is also shown in BLS's numbering system, which assigns an extra digit or two to subcategories. For instance, "WPU1331 Concrete block and brick", is indented to show it is included in the index for "WPU133 Concrete products".

At the bottom are indexes covering "Changes in PPIs for Basic Inputs," divided into nonmetals, and metal ores and scrap. Recent changes in these indexes can foreshadow changes in materials made from these items.

Changes in Construction Costs

In general, the 12-month changes through 2003 show very modest increases and many decreases in price, similar to the overall PPI for finished goods, which fell 1.6% in 2001, rose 1.2% in 2002, and rose 4% in 2003. Beginning in 2004, however, numerous construction materials have had one or more periods of double-digit increases, whereas the finished-goods PPI has continued to rise at a 4-5% annual rate.

In the latest report, the one-month change in the construction materials and components PPI (0.7%) accelerated from the June report (0.2%), while the finished-goods PPI slowed to 0.2% from 0.3% in June. The 12-month change for construction materials was 8.3%, roughly double the increase in the PPI for finished goods (4.2%) and the CPI-U (4.1%). Thus, public agencies or private owners that set budgets assuming construction materials would increase at the same rate as broad inflation gauges would find their budgets inadequate. The increases in the new school construction index (5.3% since its introduction seven months ago, for an annual rate of more than 9%) and the recently introduced new-warehouse construction index (6.7% over 12 months) show that costs of completed projects, not merely materials, are increasing faster than the broad gauges.

Percentage Changes in Producer Price Indexes (PPIs) for Construction Materials and Components, 2001-2006

BLS Series ID		to July 2006 from--							
		2001	2002	2003	2004	2005	1 mo. ago	3 mo. ago	1 yr. ago
<u>Overall Consumer, Producer & Construction Prices</u>									
CUUR0000SA0	Consumer price index (CPI-U)	1.6	2.4	1.9	3.3	3.4	0.3	1.0	4.1
WPUSOP3000	Producer price index (PPI) for finished goods	-1.6	1.2	4.0	4.2	5.4	0.2	0.9	4.2
WPUSOP2200	Materials and components for construction	0.0	0.8	3.0	10.1	6.1	0.7	2.1	8.3
PCU236221236221	New warehouse construction					7.6	2.0	2.0	6.7
PCU236222236222	New school construction						0.0	2.3	not avail.
<u>Changes in PPIs Weighted by Construction Types</u>									
PCUBHWY	Highway and street construction	-3.6	1.0	2.6	10.8	14.1	0.9	3.6	14.5
PCUBHVY	Other heavy construction	-2.6	1.0	2.6	13.4	8.8	0.9	3.4	10.4
PCUBBLD	Nonresidential buildings	-0.5	0.7	2.4	9.3	7.4	0.6	2.1	8.0
PCUBRSM	Multi-unit residential	-0.1	0.4	2.7	8.9	7.6	0.7	2.0	8.5
PCUBRS1	Single-unit residential	-0.4	0.6	3.5	7.0	6.9	0.6	1.5	7.7
<u>Changes in PPIs for Specific Construction Inputs</u>									
WPU057303	#2 diesel fuel	-44.7	54.4	13.0	37.9	46.3	-3.8	3.9	26.1
WPU05810112	Asphalt	not available		10.0	18.3	17.8	6.9	35.4	73.5
WPU13940113	Asphalt paving mixtures and blocks	0.9	2.0	3.7	4.3	4.2	3.1	12.8	37.0
WPU136	Asphalt felts and coatings	4.6	-0.6	6.3	4.1	17.1	0.7	0.6	8.1
WPU1361	Prepared asphalt & tar roofing & siding prods	5.0	-1.7	5.3	4.6	18.5	0.4	-1.2	4.9
WPU133	Concrete products	2.5	-0.3	1.5	7.6	9.8	1.4	2.0	10.8
WPU1331	Concrete block and brick	2.3	1.6	3.2	4.7	8.1	1.7	2.0	8.6
WPU1332	Concrete pipe	4.4	1.7	1.4	5.5	8.6	2.3	2.3	7.1
WPU1333	Ready-mixed concrete	2.5	-1.1	2.1	8.7	11.6	1.7	2.4	12.4
WPU1334	Precast concrete products	0.7	0.3	2.5	6.0	6.4	0.2	0.5	5.2
WPU1335	Prestressed concrete products	5.3	1.8	-0.2	8.2	3.8	-0.1	1.2	17.9
WPU1342	Brick and structural clay tile	5.3	1.9	0.7	3.0	9.5	0.3	0.5	8.9
WPU072106	Plastic construction products	-2.7	3.1	3.2	7.2	22.6	0.8	0.7	19.6
	Rubber and plastic plumbing products	-6.3	8.7	5.8	17.8	38.9			
WPU137	Gypsum products	0.4	3.4	2.8	20.0	18.2	0.9	4.0	22.7
WPU1392	Insulation materials	0.4	-1.5	2.0	8.6	2.6	-0.9	-0.9	6.7
WPUSI004011	Lumber and plywood	-2.9	1.4	3.1	5.0	-1.0	-1.3	-4.5	-4.6
WPU062101	Architectural coatings	2.9	0.6	3.9	5.3	9.2	0.0	0.6	9.0
WPU1017	Steel mill products	-6.1	11.1	1.7	48.8	-3.6	3.7	11.0	18.2
WPU101704	Hot-rolled bars, plates, & structural shapes	-4.3	2.1	11.3	53.8	-0.9	3.0	8.3	15.0
WPU101706	Steel pipe and tube	-3.7	9.1	3.3	66.0	1.1	0.5	3.5	7.8
WPU102502	Copper and brass mill shapes	-9.5	-1.6	11.6	29.6	31.0	4.8	28.2	88.0
WPU102501	Aluminum mill shapes	-2.9	-0.9	-0.5	9.9	6.6	-2.3	3.1	15.4
WPU1074	Structural, architectural, pre-eng. metal products	-1.5	-0.4	1.0	26.1	3.1	1.3	2.2	4.9
WPU107405	Fabricated structural metal	-1.3	-2.4	0.1	24.7	3.0	1.4	2.2	6.9
WPU10740501	Fabricated structural metal for buildings	-1.5	-3.3	-0.1	20.0	3.3	1.4	2.5	7.2
WPU107408	Architectural and ornamental metalwork	-0.1	3.7	0.7	23.5	5.9	0.5	2.0	3.4
WPU107404	Nonferrous pipe, tube, and fittings	0.9	0.8	-0.4	3.6	20.1	0	0	8.7
WPU107409	Fabricated iron & steel pipe, tube, & fittings	0.6	0.1	1.2	32.6	5.5	2.4	3.3	5.7
WPU1076	Fabricated steel plate	0.6	-1.0	0.6	7.6	1.0	5.7	8.7	9.6
WPU1079	Prefabricated metal buildings	0.0	4.0	-0.7	35.5	2.8	1.7	4.0	1.4
WPU112	Construction machinery and equipment	-0.1	1.9	1.3	6.0	5.0	0.0	0.3	3.6
<u>Changes in PPIs for Basic Inputs</u>									
WPU056	Crude petroleum (domestic production)	-42.4	60.6	14.3	30.5	51.3	9.4	9.3	25.5
WPU0553	Industrial natural gas	-36.7	12.2	20.3	20.1	31.5	1.2	-8.0	-1.2
WPU066	Plastic resins and materials	-9.8	9.2	6.4	28.6	11.5	0.7	0.7	8.3
WPU1321	Construction sand/gravel/crushed stone	3.3	2.5	2.4	4.3	7.9	1.3	1.5	8.8
WPU1322	Cement	1.0	1.3	-1.1	7.9	11.7	0.5	0.6	10.8
WPU1011	Iron ore	1.5	-1.3	1.6	6.7	15.5	0.1	0.1	14.3
WPU1012	Iron and steel scrap	-5.6	27.8	64.9	50.8	-10.9	-0.3	6.6	69.2
WPU102102	Copper ores	-19.6	3.6	37.4	65.1	34.1	8.6	43.7	100.9
WPU102301	Copper base scrap	-17.4	11.2	30.7	34.5	52.0	-1.1	17.8	80.6