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Gold prices during and after the Great Recession

Author: Brian Hergt, Producer Price Index Program

Gold, a highly valuable precious metal, has many practical uses that span multiple industries. Historically, one of the primary uses of gold has been to make ornamental objects, such as jewelry. Malleability is one of gold's special properties, allowing it to be hammered into sheets, drawn into wires, and cast into different shapes.

In addition to jewelry, gold is used to manufacture many products that we use in our everyday lives, especially electronics. This is because gold is an efficient conductor of electricity, and electronic components made with gold tend to be very reliable. Televisions, cell phones, calculators, Global Positioning System (GPS) devices, and computers are examples of products produced with small amounts of gold. Gold is widely used in other areas, as well, such as the medical, aerospace, and glassmaking industries.

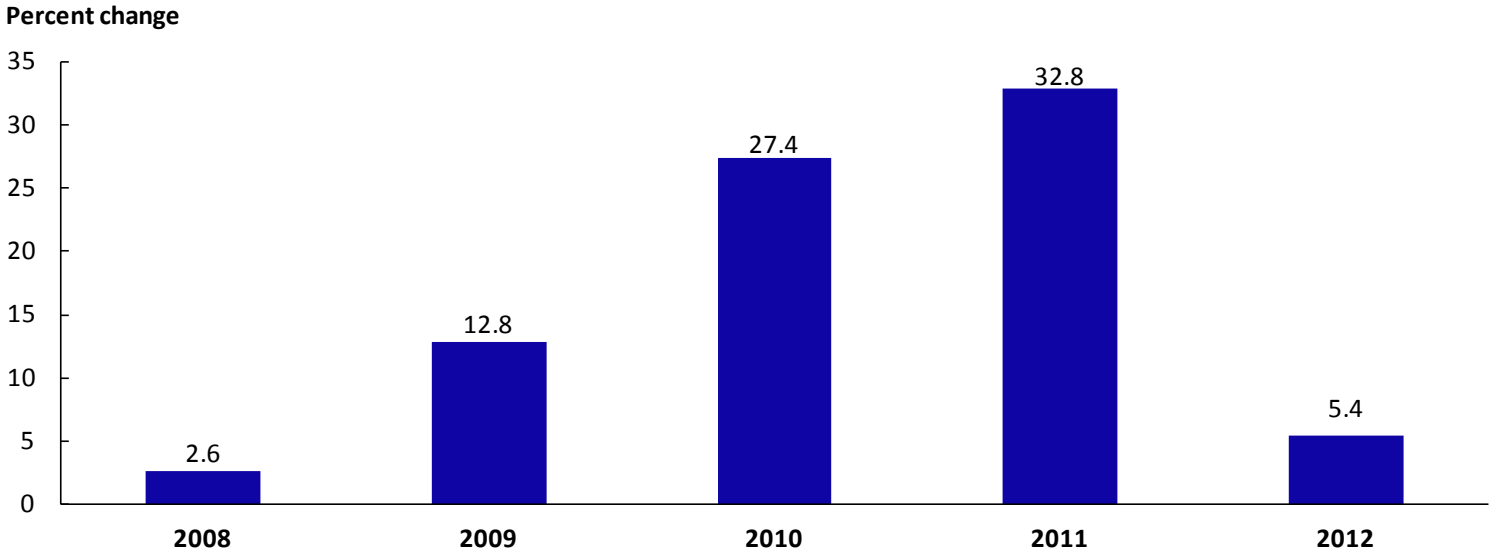
Related articles

Additional BLS articles and information related to producer and import/export prices are available online at the following links:

- "Measuring Price Change for Base and Precious Metals and Diamonds in the U.S. Import/Export Price Indexes," **http://www.bls.gov/mxp/diamondfact.pdf**
- "Producer prices reverse course in 2008," **http://www.bls.gov/opub/mlr/2009/07/art2full.pdf**
- "Producer Price Highlights, 2009," **http://www.bls.gov/ppi/ppidr201005.pdf**

Chart 1

Average annual percent change in the Producer Price Index (PPI) for gold ores, not seasonally adjusted, 2008–2012



Source: U.S. Bureau of Labor Statistics.

Beyond its artistic and utilitarian uses, gold is used as a vehicle for monetary exchange through the issuance of gold coins and bars. (The former gold standard was established as a monetary system in which the standard economic unit of account was a fixed weight of gold.) Even though the United States transitioned to a system of fiat money (deriving its value from regulation) in the early 1970s, many investors continue to use gold as an investment to hedge against inflation, currency weakness, and other economic disruptions. Federal Reserve Chairman Ben Bernanke is of the opinion that gold prices are influenced by many factors. In 2011 he said, "Well, I pay attention to the price of gold, but I think it reflects a lot of things. It reflects global uncertainties. The reason people hold gold is as a protection against what we call tail risk, really, really bad outcomes. And to the extent that the last few years have made people more worried about the potential of a major crisis, then they have gold as a protection."[1]

Price movements

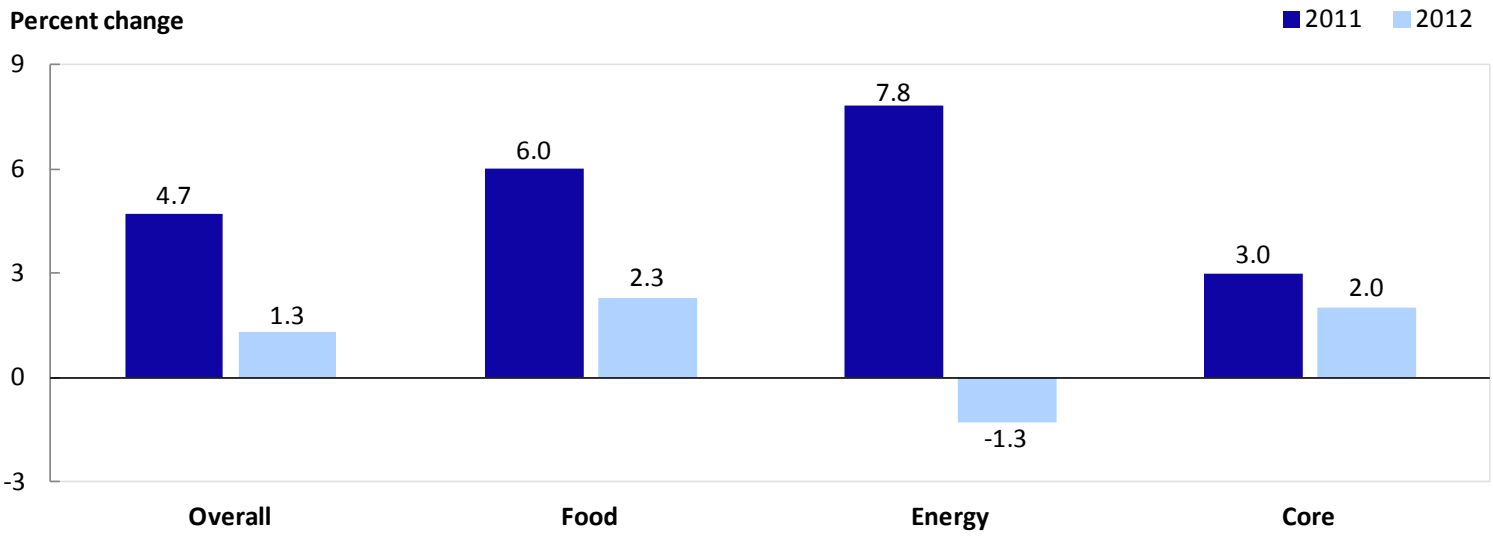
Between 2008 and 2012, the value of gold increased dramatically, as is evidenced by the 101.1-percent surge in the Producer Price Index (PPI) for gold.[2] As Chairman Bernanke stated, gold prices can act as an indicator of the health of the economy. A rise in the price of gold may be a signal that the economy is struggling. As a result, in times of either a crisis or inflation, many investors turn to gold to protect their principal. By contrast, in times of economic stability, investors are more likely to turn to more speculative investments, such as stocks, bonds, and real estate. During these times, the price for gold often declines. (See chart 1.)

After rising 2.6 percent in 2008, the PPI for gold increased 12.8 percent in 2009, as the United States was mired in the economic and financial crises of the Great Recession, and the U.S. Federal Reserve ramped up its initial effort of quantitative (or monetary) easing.[3] The extraordinary moves by the U.S. Federal Reserve to inject liquidity into the economy helped lower the value of the dollar, often seen as one of the main alternatives to gold.[4] As a result of the economic contraction and monetary easing, investors, searching for a vehicle that would maintain their total assets' value, poured money into gold, further enhancing its value in the weak economic environment.[5]

From September 2010 to September 2011, gold prices jumped 50.6 percent, due to speculation surrounding an uneven recovery and volatility in the U.S. financial markets,

Chart 2

Twelve-month percent change in the Producer Price Index (PPI) for overall, food, energy, and core finished goods, 2011 and 2012



Source: U.S. Bureau of Labor Statistics.

with gold reaching an all-time high of $1,917.90 an ounce in late August of 2011.[6, 7]

In 2012, price increases for gold slowed, rising less than they had in each of the previous 4 years. The 5.4-percent increase in 2012 was the smallest yearly gain since the 2.6-percent advance in 2008. Some of the contributing factors to the modest price increases in 2012 were the ongoing debt troubles, monetary easing by the U.S. Federal Reserve, lower interest rates, and a weaker U.S. dollar.

Price trends: producer inflation slows in 2012, led by a downturn in energy prices

The Producer Price Index for finished goods advanced 1.3 percent in 2012, following a 4.7-percent rise in 2011.[8] This slower rate of increase was led by prices for finished energy goods, which fell 1.3 percent in 2012, after climbing 7.8 percent a year earlier.[9] Also contributing to the softening in inflation pressure, prices for finished consumer foods and finished goods less foods and energy moved up less than they had in 2011. (See chart 2.) At the earlier stages of processing, the index for intermediate materials, supplies, and components inched up 0.3 percent in 2012, following a 5.7-percent jump in the preceding year. As was the case with finished goods, a downturn in prices for intermediate energy goods led the deceleration in prices for intermediate goods, while slower rates of advance in the indexes for intermediate goods other than foods and energy and intermediate foods and feeds also were factors in this price shift. The index for crude materials for further processing moved up 1.6 percent in 2012, compared with a 6.6-percent increase a year earlier. Prices for both crude energy materials and core crude goods turned down after rising in 2011, while the index for crude foodstuffs and feedstuffs advanced less than in 2011.[10]

Economic background

Within the energy goods sector, a major reversal in crude petroleum prices resulted in a similar turnaround in prices for refined petroleum products. After surging 16.2 percent in 2011, the crude petroleum index fell 11.3 percent in 2012, while the index for refined petroleum products decreased 1.4 percent, after climbing 16.9 percent a year earlier. At the close of 2012, crude petroleum inputs to refineries averaged 15.41 million barrels per day, 5.2 percent higher than at the end of 2011. Capacity utilization at refineries rose to 90.6 percent from 84.8 percent at the end of the previous year. Net imports of crude petroleum declined in 2012, averaging 7.96 million barrels per day for the 4 weeks ended December

28, 2012, compared with 8.44 million barrels per day for the 4 weeks ended December 30, 2011—a 5.7-percent drop. Conversely, domestic crude petroleum production averaged 6.92 million barrels over the final 4 weeks of 2012—18.2 percent more than for the similar period a year earlier. In 2012, crude oils stocks remained well above their 5-year historical average, after spending a major portion of 2011 in decline relative to their historical average.[11] In contrast, wellhead natural gas prices moved up 8.0 percent in 2012, following an 18.3-percent drop in the preceding year. Total natural gas consumption is estimated to have risen about 4.9 percent in 2012, led by a significant jump in demand for natural gas for electric power generation.[12] After decades of primacy for coal over other fuel sources for electric power generation, the preference for natural gas as a generator for electricity nearly equaled that of coal. Meeting this increase in demand, total natural gas production increased significantly in recent years. From 2007 to 2011, marketed production of natural gas climbed 19.0 percent, and 2012 production is estimated to be another 6.2-percent above its 2011 level. The amount of natural gas in underground storage remains at the top of its 5-year average, which has been the case for well over a year.

Within the food sector, smaller advances in prices for meats and dairy products were major contributors to the slowing rate of producer inflation at the finished and intermediate goods stages of processing, while similar price movements for slaughter livestock and raw milk were major factors in the deceleration in crude goods inflation. Continued drought has resulted in poor grazing conditions and a severe spike in grain and feed prices. In response to these higher input costs to livestock production, slaughter cattle shipments for meat production increased significantly in 2012. Commercial cattle slaughter in 2012 remained high, nearly matching the 2011 rate, which was the highest since similar drought conditions drove up the rate in 1986. However, there remains concern in the cattle market that inadequate cattle supply moving forward might lead to a lower slaughter rate and a shortfall in beef production in 2013. In the slaughter hog market, a higher slaughter rate for meat production has been roughly equaled by improved supply through ample breeding inventory and rising litter rates.[13] For raw milk, production moved up 3.7 percent from 2009 to 2011, and is projected to have increased again in 2012.[14] Dairy cattle inventory edged up from 2009 to 2012, while milk production per cow climbed about 5 percent over this period. However, higher grain and feed prices continue to apply input price pressure to the milk market.

Inflation for industrial goods other than food and energy also slowed in 2012. The index for core crude goods turned down in 2012, led by prices for iron and steel scrap, raw cotton (both of which decreased following large gains in 2011), and gold ores, which moved up at a much slower rate, compared with a year earlier. In terms of processed goods for business demand, sharp reversals in prices for steel mill products and industrial chemicals helped slow the overall rate of advance in the intermediate core index, following a strong runup in prices a year earlier. At the finished goods stage of processing, the smaller rise in the finished core index was broad based, as price increases slowed for products ranging from passenger cars and civilian aircraft to consumer plastics and apparel and related products.[15] Slower growth in U.S. Gross Domestic Product (GDP) likely contributed to the slowing rate of inflation for core goods. Although the U.S. economy grew at a 3.1-percent rate in the third quarter of 2012, GDP faltered during the first two quarters and the final quarter of the year, moving up at annualized rates of 2.0 percent in the first quarter, 1.3 percent in the second quarter, and declining 0.1 percent in the fourth quarter.[16]

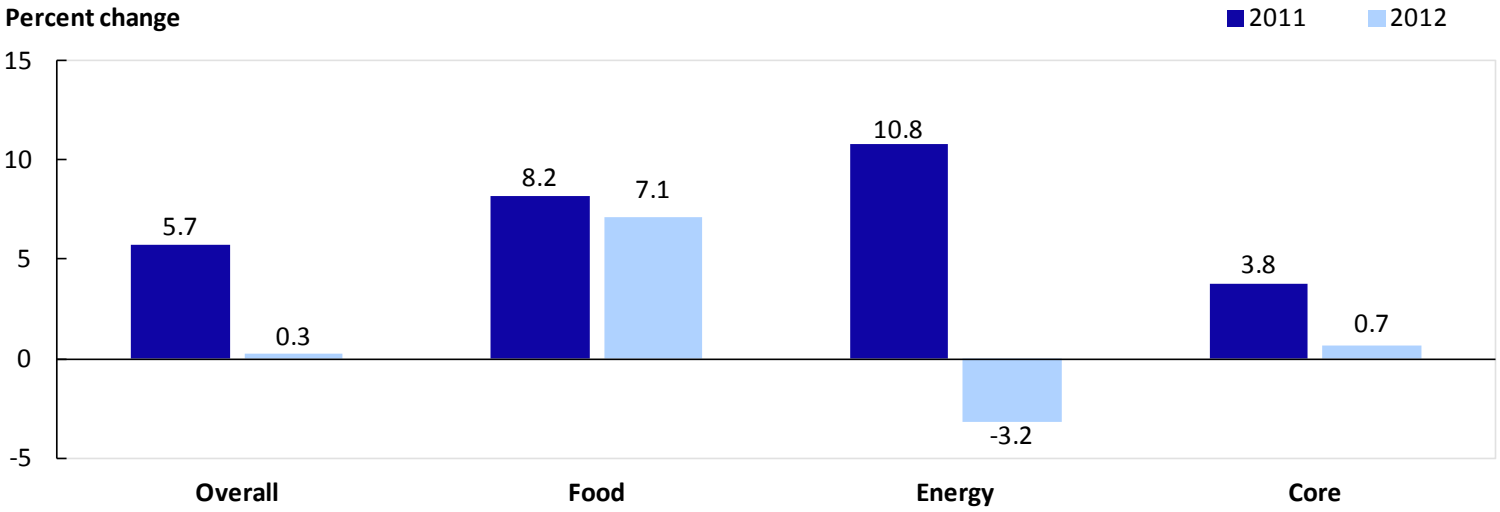
Finished goods

About 60 percent of the slower rate of increase in finished goods prices in 2012 can be traced to the index for finished energy goods, which fell 1.3 percent, after climbing 7.8 percent in 2011. Gasoline prices edged down 0.6 percent in 2012, after surging 13.1 percent in the prior year. Prices for liquefied petroleum gas, home heating oil, and finished lubricants also declined, following advances in 2011. The indexes for residential electric power and diesel fuel moved up less than they had a year earlier. In contrast, prices for residential natural gas decreased 1.8 percent in 2012, after falling at a 3.8-percent rate in the preceding year.

The index for finished consumer foods increased 2.3 percent in 2012, after climbing 6.0 percent in 2011. Over one-third of this slower rate of advance can be traced to meat prices,

Chart 3

Twelve-month percent change in the Producer Price Index (PPI) for overall, food, energy, and core intermediate goods, 2011 and 2012



Source: U.S. Bureau of Labor Statistics.

which moved up 2.5 percent, following an 11.8-percent surge a year earlier. Prices for dairy products and for processed fruits and vegetables also rose less than in the previous year. The index for fresh and dry vegetables fell at a faster rate than in 2011. In contrast, prices for fresh fruits and melons moved up 7.9 percent in 2012, following a 13.2-percent drop in the preceding year. The index for processed young chickens increased more than it had in 2011.

The index for finished goods less foods and energy rose 2.0 percent in 2012, following a 3.0-percent increase in 2011. Leading the slower rate of advance, passenger car prices inched up 0.3 percent, after climbing 2.5 percent a year earlier. Prices for apparel and other fabricated textile products, consumer plastic products, civilian aircraft, and platinum and gold jewelry also moved up less than they had the prior year. In contrast, the index for pharmaceutical preparations rose 6.2 percent in 2012, compared with a 4.2-percent advance in 2011.

Intermediate goods

The Producer Price Index for intermediate goods rose 0.3 percent in 2012, following a 5.7-percent advance in 2011. (See chart 3.) Prices for intermediate energy materials led this deceleration, declining in 2012, compared with an increase in the prior year. Slower rates of advance in the indexes for intermediate materials less foods and energy and for intermediate foods and feeds also contributed to the slowing rise in prices for intermediate goods.

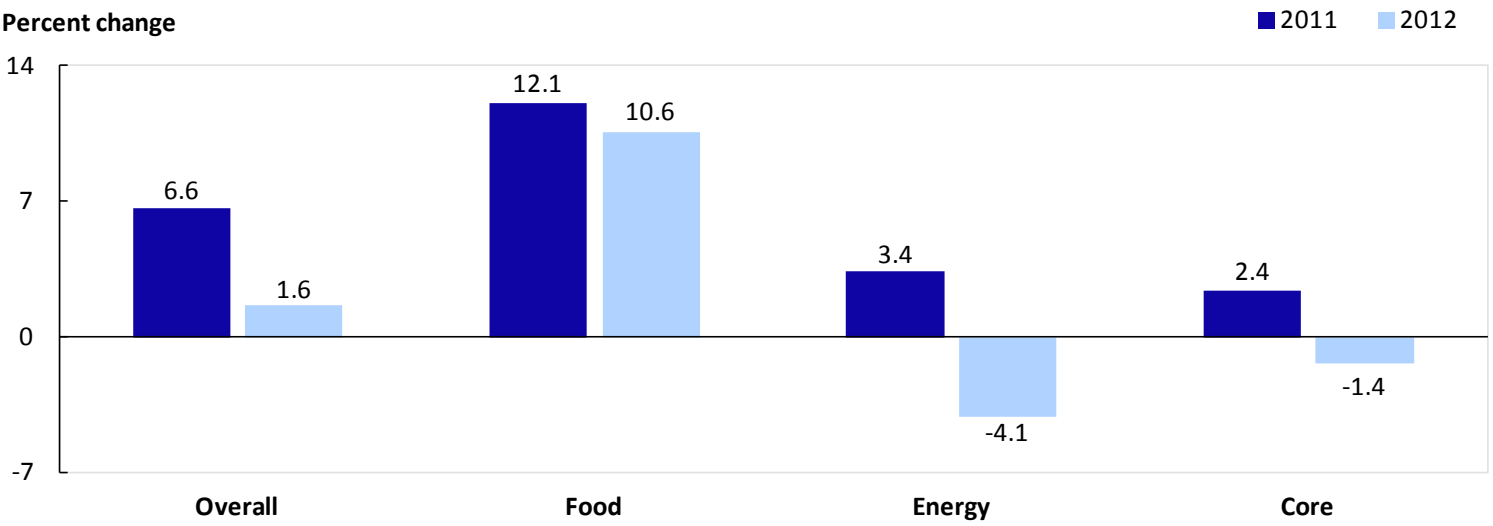
Prices for intermediate energy materials declined 3.2 percent in 2012, subsequent to a 10.8-percent gain a year earlier. A major factor in this downturn was the jet fuel index, which fell 5.4 percent, after climbing 21.5 percent in 2011. Prices for gasoline, lubricating oil base stocks, asphalt, and liquefied petroleum gas also turned down in 2012. The diesel fuel index rose less than it had a year earlier. By contrast, the rate of decline for prices for natural gas to electric power slowed to 2.1 percent from 6.3 percent in 2011.

The index for intermediate materials less foods and energy edged up 0.7 percent in 2012, after a 3.8-percent advance a year earlier. In 2012, higher prices for plastic resins and materials, softwood lumber, general purpose machinery and equipment, paints and allied products, and pharmaceutical preparations slightly outweighed lower prices for steel mill products, ethanol, basic inorganic chemicals, fertilizer materials, and synthetic rubber.

Prices for intermediate foods and feeds moved up 7.1 percent in 2012, following an 8.2-percent advance in 2011. The increase in the meats index slowed to 2.5 percent in 2012 from 11.8 percent in the previous year. Similarly, prices

Chart 4

Twelve-month percent change in the Producer Price Index (PPI) for overall, food, energy, and core crude goods, 2011 and 2012



Source: U.S. Bureau of Labor Statistics.

for natural, processed, and imitation cheese rose less than they had in 2011. The indexes for fats and oils and for refined sugar products turned down in 2012. In contrast, prices for prepared animal feeds surged 20.0 percent, compared with a 5.0-percent increase a year earlier. The index for processed young chickens increased more than it had in 2011.

Crude goods

The PPI for crude materials for further processing increased 1.6 in 2012, compared with a 6.6-percent climb in 2011. Contributing to the lower rate of advance, the indexes for crude energy materials and crude nonfood materials less energy declined in 2012, after rising in the previous year. The index for crude foodstuffs and feedstuffs also was a factor in the deceleration in crude materials prices, advancing less than in 2011. (See chart 4.)

The index for crude energy materials turned down 4.1 percent, following a 3.4-percent rise in 2011. In 2012, crude petroleum prices declined 11.3 percent, after jumping 16.2 percent a year earlier. The index for coal increased less than it had in 2011. In contrast, prices for natural gas turned up 8.0 percent in 2012, subsequent to dropping 18.3 percent in the previous year.

In 2012, the index for crude nonfood materials less energy decreased 1.4 percent, compared with a 2.4-percent advance in 2011. Prices for iron and steel scrap led this downturn, falling 15.5 percent, following an 8.7-percent rise a year earlier. The index for raw cotton also turned down in 2012, and prices for gold ores increased less than in 2011. In contrast, the index for nonferrous scrap moved up 6.4 percent in 2012, after falling 4.7 percent a year earlier. Prices for wastepaper also turned up in 2012, and the index for grains advanced more than it had in 2011.

Prices for crude foodstuffs and feedstuffs increased 10.6 percent in 2012, subsequent to a 12.1-percent rise in the previous year. The index for slaughter livestock was the main factor in this slower rate of advance, moving up 1.7 percent, after a 20.5-percent jump in 2011. Prices for raw milk and alfalfa hay also rose less in 2012. In contrast, oilseeds prices surged 29.1 percent in 2012, following an 8.5-percent drop a year earlier. The indexes for grains and slaughter chickens increased more than they had in 2011.

Trade industries

In 2012, the increase in the Producer Price Index for the net output of total trade industries accelerated to 4.0 percent from 3.0 percent in 2011. (Trade indexes measure changes in margins received by wholesalers and retailers.) Leading this faster rate of advance, the margin index for merchant wholesalers of nondurable goods

climbed 4.7 percent, after rising 1.3 percent in the prior year. Margins received by discount department stores and merchant wholesalers of durable goods also rose more than in 2011. The margin index for warehouse clubs and supercenters turned up, after declining in the previous year. In contrast, margins received by electronic shopping and mail order houses decreased at a faster rate, falling 7.3 percent, subsequent to a 2.2-percent decrease in 2011. The index for new car dealers rose less in 2012 than in the preceding year.

Transportation and warehousing industries

The advance in the Producer Price Index for the net output of transportation and warehousing industries slowed to 2.6 percent, from 6.1 percent in 2011. Prices received by the air transportation industry group led this deceleration, edging up at the slower rate of 0.9 percent, compared with a 9.5-percent rise a year earlier. The industry indexes for truck transportation, couriers and express delivery services, and rail transportation also advanced less than they had in 2011. In contrast, the index for deep sea freight transportation rose 4.1 percent, subsequent to a 5.3-percent decline in 2011. Prices received by the industry for pipeline transportation of crude oil also turned up, after decreasing in the prior year.

Traditional service industries

In 2012, the rise in the Producer Price Index for the net output of total traditional service industries slowed to 1.3 percent from 2.0 percent in 2011. A major factor in this slower rate of increase was the index for insurance carriers and related activities, which rose 1.6 percent in 2012, following a 3.2-percent advance a year earlier. Prices received by general medical and surgical hospitals also advanced less than they had in 2011. The indexes for the depository credit intermediation industry group and for non-casino hotels and motels turned down, after rising in the preceding year. In contrast, the index for portfolio management jumped 21.0 percent in 2012, compared with a 0.7-percent rise in the prior year. Prices received by the passenger car rental industry turned up, after declining in 2011. ■

This **BEYOND** THE **NUMBERS** article was prepared by Brian Hergt, Joseph Kowal, Antonio Lombardozzi, and Lana Borgie, economists in the Producer Price Index Program. Email: **ppi-info@bls.gov** Telephone: 202-691-7705.

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Notes

1. "Heavy Metals. Hard Currencies." *The Gold & Silver Speculator*, June 13, 2012, **http://www.danielstrading.com/advice/dt/gold-silver-speculator/archives/The-Gold-and-Silver-Speculator_2012-06-13.pdf**
2. Price movements described in this section reflect annual average comparisons for 2008 through 2012.

3. "QE3 And The Economy: It Will Help, But Not Solve All Problems," *Forbes*, September 13, 2012, **http://www.forbes.com/sites/billconerly/2012/09/13/qe3-and-the-economy-it-will-help-but-not-solve-all-problems/**
4. "Gold Falls After Bernanke, China Rate Cut," *Marketwatch*, June 7, 2012, **http://articles.marketwatch.com/2012-06-07/markets/32080912_1_gold-futures-frederic-panizzutti-silver-futures**
5. "Gold Prices Hit $1,000 Milestone," *CNN Money*, March 13, 2008, **http://money.cnn.com/2008/03/13/markets/gold/index.htm**
6. PPI data reflect prices as of Tuesday of the week of the 13th of each month. Therefore, a price change occurring in late August 2011 would be reflected in September 2011 PPI data.
7. "Gold and Silver Prices Outlook for September 2011," *Trading Nrg*, September 5, 2011, **http://www.tradingnrg.com/gold-prices-forecast-silver-price-outlook-for-september-2011/**. Also, Hibah Yousuf, "Gold tops $1,900, looking 'a bit bubbly'" *CNN Money*, August 23, 2011, **http://money.cnn.com/2011/08/22/markets/gold_prices/index.htm**.
8. Price movements in this section reflect December to December calendar-year comparisons.
9. All PPI data are recalculated 4 months after original publication, to reflect late data received from survey respondents. Twelve-month percent changes for December 2012 will be revised with the release of PPI data on May 15, 2013.
10. Within the PPI stage-of-processing structure, the indexes for goods other than foods and energy commonly are referred to as the core indexes.
11. *Weekly Petroleum Status Report*, DOE/EIA-0208(2012-104), U.S. Energy Information Administration, (U.S. Department of Energy, January 4, 2013), **http://www.eia.gov/pub/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/historical/2013/2013_01_04/pdf/wpsrall.pdf**. See page V for refinery input, capacity utilization, and net import data; see table 1 on page 1 for domestic production data; see figure 1 on page 5 for data on crude oil stocks.
12. For data on marketed production and total consumption of natural gas, see *Natural Gas Monthly December 2012*, U.S. Energy Information Administration, (U.S. Department of Energy, January), **http://www.eia.gov/naturalgas/monthly/archive/2012/2012_12/pdf/ngm_all.pdf**, p. 3. For information regarding natural gas demand from electric power generation link to *Today in Energy, Electricity generation from coal and natural gas both increased with summer heat*, Energy Information Administration, (U.S. Department of Energy, October 19, 2012), **http://www.eia.gov/todayinenergy/detail.cfm?id=8450**. For data on natural gas in underground storage go to *Natural Gas Weekly Update*, Energy Information Administration, (U.S. Department of Energy, January 17, 2013), **http://www.eia.gov/naturalgas/weekly/archive/**.
13. *Livestock, Dairy, and Poultry Outlook, January 2013*, LDP-M-223, January 17, 2013, U. S. Department of Agriculture, Economic Research Service, pp. 1-8, **http://www.ers.usda.gov/media/984422/ldpm223.pdf**.
14. Ibid. p. 13. Also, *Data Set: U.S. dairy situation at a glance (Monthly)*, at **http://www.ers.usda.gov/data-products/dairy-data.aspx**.
15. More highly processed intermediate and finished goods commonly exhibit price movements that are somewhat different from price movements for less-processed goods, because basic material costs tend to be a smaller portion of total costs for producers of more highly processed goods than for manufacturers of less-processed goods. Contracts and escalation agreements also can delay or mitigate the pass-through effect of early-stage price volatility at successive stages of processing.
16. *Gross Domestic Product: Fourth Quarter and Annual 2012 (Advance Estimate)*, BEA 13–02, Bureau of Economic Analysis, January 30, 2013, at **http://www.bea.gov/newsreleases/national/gdp/2013/pdf/gdp4q12_adv.pdf**, p. 6.