



Producer Price Index

A Tool for Economic Analysis



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What is the Producer Price Index (PPI)?

The Producer Price Index represents a family of indices that measures the average change over time in the selling prices received by domestic producers of goods and services.

The PPI measures price change from the perspective of the producer; while the Consumer Price Index (CPI) measures price change from the purchaser's perspective.

Uses of the Producer Price Index:

- ▶ a short-term indicator of inflationary trends
- ▶ a deflator of other economic series, e.g. Gross Domestic Product (GDP) and the Producer Volume Index (PVI)
- ▶ for contract negotiations
- ▶ an analytical tool for business and/or researchers



Producer Price Index data are widely used by the business community, as well as government.

How does the PPI differ from the CPI?

The PPI and CPI measure price change over time for a fixed set of goods and services. However, they differ in two critical areas:-



The composition of the set of goods and services

The goods and services included in the PPI are the marketed output of domestic producers. The items included in the CPI are goods and services purchased for consumption purposes by households including inputs.



The types of prices collected

The price collected for an item included in the PPI is the price that the producer charges for goods and services. The price collected for an item in the CPI is the retail price that the consumer pays. (including taxes, transportation costs, etc.)

How is an index interpreted?

An index is a tool that simplifies the measurement of movements in a numerical series. Movements are measured with respect to the base period, when the index is set to 100. An index of 110 means that there has been a 10-per cent increase in prices since the base period.



Similarly, an index of 90 indicates a 10-per cent decline in prices.

How is the PPI calculated?

The Laspeyres index compares the base period prices for a set of goods, to the current period for the same set of goods.

The Laspeyres formula is given as:-

$$\frac{\sum_{i=1}^n p_{ti} q_{0i}}{\sum_{i=1}^n p_{0i} q_{0i}}$$

where $i=i^{\text{th}}$ product, p =price, q =quantity, t =current period and 0 =base period.

The modified Laspeyres formula used to calculate the PPI is:-

$$I_m = \sum_{i=1}^n \frac{v_{0i} \frac{p_{ti}}{p_{0i}}}{\sum_{i=1}^n v_{0i}} * 100$$

Where:

I_m is the calculated value of the index

$\sum v_{0i}$ is the total value of all product weights (unit value)

p_{0i} is the price of the i^{th} product in the base period;

p_{ti} is the price of the i^{th} product in the current period;

v_{0i} is the value of the i^{th} product in the base period.

In this form, the index is the weighted average of price relatives, using values of base period as weights.

Role of Weights

Sampled items are weighted by a measure of their size and importance. Weights improve the precision of the PPI estimates of price change.

How are the PPI Weights determined?

In the first stage, each item is given a weight based on its relative importance to the establishment's revenue for the base period. In the second stage, indices for individual goods are combined into aggregate indices.

The PPI price sample follows a two-stage selection principle.

How are Producers and Products selected for the PPI Survey?

Stage 1 involves the selection of Establishments by Industry.

- Establishments are classified by industry based on the principal product or service they produce.
- Within each industry category, establishments are selected on the basis of their output.

Stage 2 involves the selection of Products by Establishments.



The products are selected based on their share of the establishment's total sales.

Type of PPI that STATIN will be publishing

STATIN is publishing an Output PPI that measures the rate of change in the prices of products sold as they leave the producer.

The index is industry-based with each establishment classified according to its main activity, for example, mining or manufacturing industry. The Jamaica Industrial Classification (JIC) system is used to group economic activities and products and to provide an organizational structure for the PPI. The available products are placed within the appropriate industry or combined industry groups.

The worksheet for calculating the PPI is made up of a representative sample of establishments and a set of standardized products whose overall price changes are representative of all the transactions taking place within the economy.

Industries that make up the PPI

The PPI currently covers two industries, Mining and Manufacturing. These goods-producing industries were selected as data are more readily available to compute the index and are required as deflators in GDP estimates. Approximately 160 establishments with a selection of over 400 products are represented in these two industries.



Revision Policy and Future Developments

Revisions will be carried out to incorporate the most current information to facilitate improvements to the quality of the indices.

1. The first published index will be preliminary.
2. All indices are subject to (2) subsequent revisions after the original release.

For the future, other industries, for example, Agriculture, Utilities, Services, etc will be added to the PPI family of Indices.

Related PPI Terms

Base Period

This is the point in time used as a reference period for comparison with other time periods. The base period used for this PPI is 2005. The values of the base period provide the weights for a price index.

Deflator

A “deflator”, is a statistical tool used to revalue current dollar values to constant dollar values; that is the value of the reference period. The adjustment removes the impact of inflation and facilitates a more accurate comparison of value data in different time periods. Deflators, such as the PPI, are used to revalue goods and services at the prices of the reference period/base period.

Gross Domestic Product (GDP)

The GDP is the aggregated monetary value of all goods and services produced by the entire economy during a given period. It is the single most widely used indicator of economic performance.

Related PPI Terms cont'd.

The GDP at current prices measures the value of output at the prices prevailing in the current period, while GDP at constant prices measures the output at the prices of some base period and is an indication of real economic performance regardless of changes in prices.

Industry

Industry is the term used to describe a group of establishments engaged in similar types of business activity, e.g. mining and quarrying, manufacturing, construction, etc. If a company participates in multiple business activities, it is usually considered to be in the industry in which most of its revenues are derived.

Inflation

Inflation is the overall general upward movement of the prices of goods and services in an economy. Continuously rising prices is interpreted as a decline in the purchasing power of money. Inflation is usually measured by the CPI and PPI. It is one of the most important economic concepts. On the other hand, a general decline in prices is called deflation.

Input PPI

An input PPI measures the change in the prices of goods and services bought as intermediate inputs by domestic producers. It covers both domestically produced intermediate inputs and imported intermediate inputs with valuation being at purchaser's prices.

Related PPI Terms cont'd

Laspeyres Price Index

This is a weighted index that shows the ratio of expenditure in the current period to expenditure in the base period.

A Laspeyres price index is computed by taking the ratio of the total cost of purchasing a specified group of commodities at current prices to the cost of that same group at base period prices and multiplying by 100. The index answers the question *"How much more or less does it cost now to purchase the same item as in the base period?"*

Output PPI

An output PPI is a measure of the change in the prices of goods and services sold on the domestic market and output sold as exports. The Price data on finished goods are usually most closely watched because they are the best measure of what purchasers will actually have to pay.

Price Relative

A price relative is the ratio of the price of an individual product in one period to the price of that same product in some other period.

Producer's Price

Producer's price is the amount received by the producer from the purchaser for a unit of good or service produced as output. It excludes all deductible tax, the supplier's retail and wholesale margins and separately invoiced transport and insurance charges. Producers prices can be quoted in one of several ways.

Related PPI Terms cont'd



List Price (Manufacturer's suggested retail price)

A list price is the price of a product as quoted in the producer's price list, catalogue, Internet site, etc. This price is the gross price exclusive of all discounts, surcharges, rebates that might apply in the actual transaction.



Actual Transaction Price (Market Price)

The actual transaction price or market price is the price as determined by buyers and sellers in an open market. It is also called the "net price", inclusive of all discounts, surcharges and rebates applied to the transaction.

Weights

A weight is a number or value attached to an observation or item that assigns to it a specific degree of importance relative to the importance of others in the set to which it belongs. Weights constitute a set of numbers between zero and one that sum to unity and are used when calculating averages. They are used to represent the impact of a particular price change on the overall index.

Level at which the Producer Price Index (PPI) will be published by Industry

MINING & QUARRYING

Bauxite Mining & Alumina Processing

Other Mining & Quarrying

MANUFACTURING

Food, Beverage & Tobacco

Production, Processing & Preserving Meats, Fish, Vegetables, Oils and Fats

Meat & Meat Products and Fish & Fish Products.

Fruits & Vegetables and Vegetable & Animal Oils & Fats.

Manufacture of Dairy Products.

Manufacture of Grain Mill Products, Starches & Starch Products.

Manufacture of Other Food Products.

Bakery Products.

Sugar, Cocoa, Coffee, Chocolate & Sugar Confectionery

Other Food Products n.e.c.

Manufacture of Beverages and Tobacco

Textile, Wearing Apparel and Leather Products.

Wood, Wood Products and Furniture

Paper & Paper Products.

Chemicals & Chemical Products.

Refined Petroleum Products.

Other Non-Metallic Mineral Product (incl. Rubber & Plastic Products).

Fabricated Metal Products excl. Machinery & Equipment.

Other Manufacturing n.e.c.



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