How the Producer and Consumer Price Indexes Differ

It is often assumed that the direction and magnitude of price change in the Producer Price Index (PPI) for finished goods anticipates a similar change in the Consumer Price Index (CPI) for all items.

When this assumed relationship is contradicted by the actual movements of the two series, as it often is, many data users ask why the PPI and CPI show different price movements.

The answer is that conceptual and definitional differences between the PPI and CPI--differences which are consistent with the uses of the two measures--contribute to the differences in their price movements.

A primary use of the PPI is to deflate revenue streams in order to measure real growth in output. A primary use of the CPI is to adjust income and expenditure streams for changes in the cost of living. The different uses cause definitional differences that can be categorized into two critical areas: (1) the composition of the set of commodities and services they include and (2) the types of prices collected for these items.

Compositional differences

The Producer Price Index for Finished Goods tracks the average change in prices over time of domestically produced and consumed commodities. The index is comprised of prices for both consumer goods and capital equipment, but excludes prices for most services. Weights for the finished goods in the PPI are currently based on the value of shipments of products as reported by producers for the 1997 economic census.

The All Items CPI measures the average change in prices over time of goods and services purchased for personal consumption by urban U.S. households, regardless of the item's country of origin. This index is comprised solely of prices for consumer goods, thus it excludes prices for capital equipment. In addition, CPI weights correspond to the Consumer Expenditure Survey (currently for the years 2001-2002).

Differences in the type and timing of prices collected

Sales and excise taxes. The price collected for an item included in the PPI is the revenue received by its producer. Sales and excise taxes are not included in the producer price because they do not represent revenue to the producer. The price collected for an item included in the CPI is the out-of-pocket expenditure by a consumer for the item. Sales and excise taxes are included in the price because they are necessary expenditures by the consumer for the item. As a consequence, changes in the tax rates on cigarettes or alcoholic beverages, for example, can cause the CPI to move relative to the PPI.

Distribution costs

The price (revenue) received by a producer for a particular product may differ from the price paid by a consumer for that same product for important reasons besides taxes. The product in question, such as food or apparel, may have followed a distribution path from producer through wholesaler and retailer before its final sale to the consumer. In this case, the price paid by the consumer for the product likely reflects intermediate markups to cover the costs of shipping it from one party to another, the costs of doing business by both the wholesaler and retailer as well as profit to the wholesaler or retailer.

Timing of collection

Another possible source for discrepancies in price movements between the PPI and CPI is the difference in the timing of data collection in the two programs.

The PPI uses primarily a mail survey, which is sent to respondents on a monthly basis. In contrast, the CPI collects price quotes by telephone or personal visits by BLS representatives.

Because respondents sometimes do not return PPI survey forms on a timely basis, indexes are routinely subject to revision four months after original publication to reflect late reports and price corrections. Once revised, PPI indexes are considered final. When PPI indexes are first released, they are typically based on a substantial portion of the total number of prices that will eventually be received from respondents; hence, subsequent revisions are normally minor.

The CPI does not routinely revise indexes

The PPI targets the price of goods on a specific date, the Tuesday of the week containing the 13th of the month. CPI prices are typically collected throughout the first 18 working days of each month. If a particular event or pricing decision occurred late in the month, it is possible that it would be reflected in the CPI prior to the PPI.

Prices for some product and service categories in the CPI are collected every other month. Because of this “bi-monthly” price collection, the CPI reflects the price movement for some items over a 2-month period. In the PPI, all price quotations are collected monthly.

In addition, different methods may be employed for the introduction of new models of priced goods. In the PPI, a new model is priced when the producer stops selling the previous model. Most items in the CPI are priced at the outlet until they are no longer available for sale, although for some items, such as new cars and trucks, the new model is first priced when it out-sells the previous model. Therefore, in some cases, a new model might be priced in the PPI well before it shows up in the CPI. For example, in the PPI most new passenger cars are introduced in October; for the CPI, new models are introduced over a longer period (4 to 6 months beginning in September), as dealers close out old inventory and begin selling the newer models.

“Pass through” of price change from the PPI to the CPI

Some assume that a price change recorded in a particular component of the PPI will eventually and directly be seen in the same or most similar component of the CPI. In reality, it is difficult to project whether, and to what extent, an increase in the PPI will “pass through” to the CPI. For example, an increase in the price paid to a producer for a good may not be passed on by a retailer if conditions in the retail market preclude such an action. Alternatively, the retailer may increase the selling price for the good in question, but not by the full extent of the increase in the price paid to the producer.

Summary

The conceptual and definitional distinctions of the PPI and CPI are consistent with the uses of these two major economic indicators. The PPI is used to deflate revenue to measure real growth in output and the CPI is used to adjust income and expenditures for changes in the cost of living. In brief, the CPI includes services, imports, and sales taxes, whereas the PPI excludes them, with the exception of some services. Distribution costs are included in the CPI but not in the PPI. Finally, the PPI includes capital equipment and the CPI does not.

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Source for this tutorial: The U.S. Bureau of Labor Statistics