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The differences among price indexes

Posted on March 27, 2023

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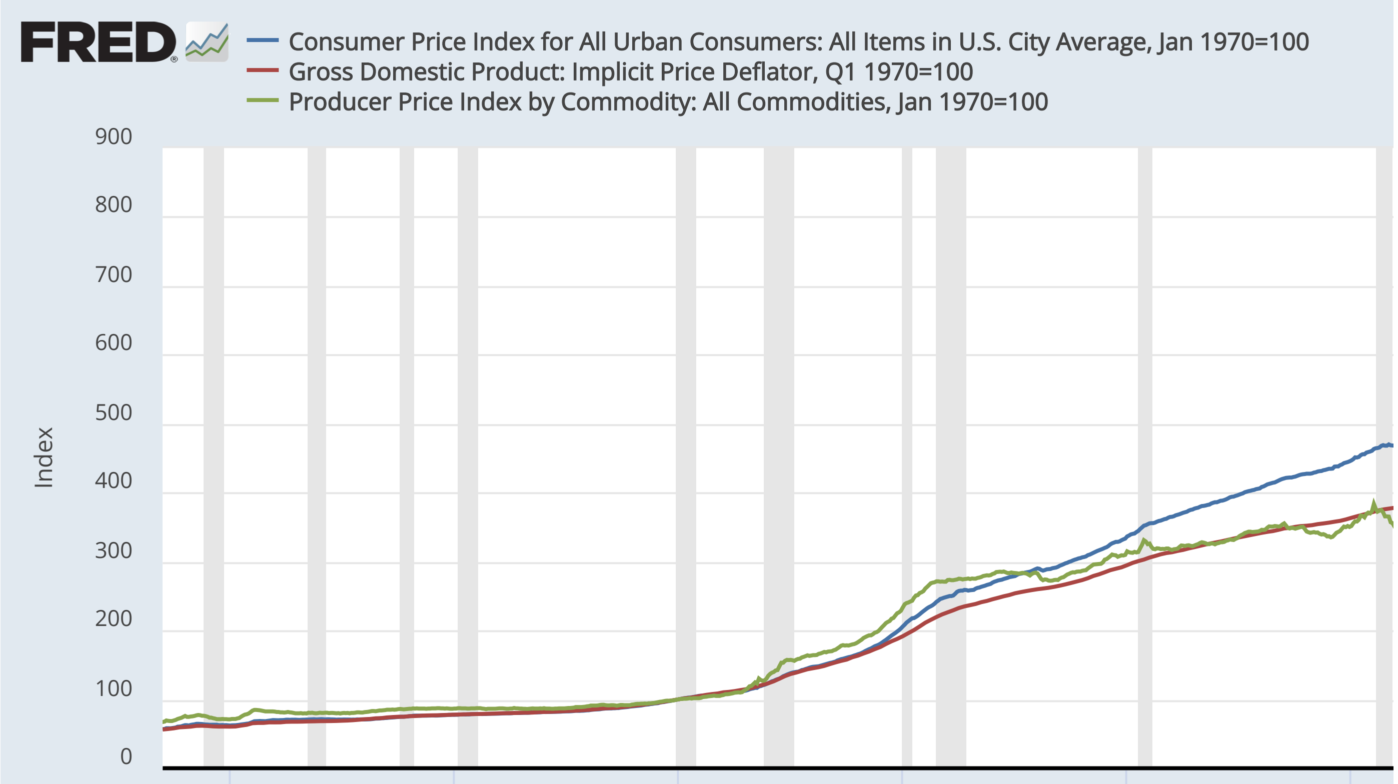

In our previous blog post, we discussed how the interpretation of data can be strongly influenced by the price index you choose to deflate those data—that is, when you want *nominal* measurements in *real* terms.

The FRED graph above shows the three price indexes that were used in that previous post. When you look at them over several decades, you notice that they show stark differences. First, the consumer price index (CPI) has increased significantly more than the GDP deflator since the early 1970s, opening a gap of almost 30%. The producer price index (PPI) fluctuates strongly between the two, being generally closer to the GDP deflator.

Why these large differences? Well, they do measure different things…

- The CPI measures the evolution of the prices for a basket of goods a typical urban household would consume.
- The GDP deflator measures the overall price of all that is produced in the economy.

- The PPI measures the price that producers are getting for their wares.

At first glance, they seem to be measuring essentially the same things—all that is consumed, produced, and sold. A closer look reveals some important differences. The CPI, by definition, includes only *consumption* goods and services. So, it includes imports but not exports. The other two indexes include exports but not imports. The GDP deflator also includes *investment* goods and public expenses. The PPI covers goods but not services.

How the prices of these included or excluded categories have evolved over the decades since the 1970s can generate gaps. For example, there are now much more exports and imports than there were 50 years ago. Energy is much more expensive and factors-in differently for the three indexes. The proportion of services in consumption and output has increased a lot, too. And that's why this FRED graph looks the way it does.

How this graph was created: Search **FRED** for CPI, click on "Edit Graph," open the "Add Line" tab, add "GDP deflator, then "PPI." Choose units index 100 as of 1970-01-01, click "Apply to All," and start the data on 1947-01-01.

Suggested by Christian Zimmermann.

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