Data

How do you derive your constant price series for the national accounts?

← Data Compilation Methodology

Constant price national accounts data are collected from the same sources as current price national accounts data. In general, constant price series are derived using price indices or unit-value indices to deflate current price series. For example, from the expenditure side, Gross Domestic Product (GDP) at constant prices is equal to the sum of household consumption expenditure at constant prices, government consumption expenditure at constant prices, fixed capital formation and changes in inventories at constant prices, and net exports at constant prices. Each of these components is deflated using indices at the most detailed level possible. GDP in constant prices can also be derived from the production side.

Local currency constant price data are converted to U.S. dollars for the purpose of aggregation. When we convert the constant price data to U.S. dollars, we preserve the growth rates observed in the local price series. That is, we convert the constant LCU series to an index by dividing each year by the 2010 value (so 2010 = 1), and then multiply each year's result by the 2010 current price value converted to U.S. dollars using the 2010 period average official exchange rate.

The following is a more detailed explanation of GDP at constant prices from the expenditure approach:

Household consumption expenditure at constant prices is in most countries derived by deflating the household consumption in current prices by components of the consumer price index (CPI). The CPI is the only source with comprehensive data on changes in the purchasers' prices on consumer goods and services. Most countries do not apply the overall CPI directly to deflate the total household consumption expenditure. Instead they prepare the estimates at constant prices at the most detailed level possible. Why not deflate total household consumption expenditure by the overall change in CPI? There are several reasons for not doing so: (i) the consumption basket used in constructing CPI might differ from the coverage and weights of each component in the national accounts; (ii) the weight, price, and quantity base periods used in compiling the CPI might be different from the one used as base year for the constant price estimates in the national accounts.

Government and Non-Profit Institutions Serving Households (NPISHs) consumption expenditures at constant prices in most countries are derived using the same deflator as used for the output of the non-market production by government and NPISHs. (If the government purchases in the market for ultimate transfers to the households, this part of the consumption should be deflated using a separate deflator.) Output of non-market services at constant prices are either derived by volume extrapolation, using total input of production factors at constant prices as the volume indicator, or by deflating output at current prices by a compound price index for total input of production factors.

Because changes in relative prices for different types of fixed capital can be rather significant, compiling constant price estimates of **gross fixed capital formation** at the most detailed level possible is recommended. Most countries compile separate estimates for 'buildings and other construction', 'machinery and equipment', and 'motor vehicles and other transport equipment.' For machinery and equipment, including transportation equipment, the common way to construct appropriate deflators is by weighting together relevant components of the producer price index and price or unit value indices for imports of capital goods.

In many countries **imports and exports** are deflated using unit-value indices. Importers and exporters are required to declare the value and the quantity of shipments. Unit-value indices can easily be constructed by dividing value by quantity for each product-group. There is a problem in using these kinds of indices, because they reflect not only price changes but may also reflect changes in quality.

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