

Core Inflation

The core inflation, also known as underlying inflation, is aimed at measuring price trends, purging disturbances originating from temporary shocks. In other words, the core inflation should reflect changes in prices caused only by fundamentals like demand pressures, permanent movements in relative prices or changes in inflation expectations.

There has been a surge in core inflation literature in recent years, as more countries adopt explicit inflation targeting regimes or single out inflation as the main monetary policy goal.

Core inflation is an important tool for monetary policy as it helps monetary authorities to identify shocks hitting inflation. Among those are the temporary supply shocks like the ones resulting from climate factors (ubiquitous in *in natura* food) or from seasonal patterns (common in clothing and beef). Temporary shocks, despite altering the headline index, are quickly reversed without affecting expectations and, therefore, do not justify a policy response from the monetary authority.

There are several methodologies on hand to estimate core inflation¹. In chronological terms, the 1970's witnessed the first attempts to measure underlying inflation, with the most volatile components being purged from the headline index. Hence, prices whose short-term behavior mostly differs from the underlying trends are not considered. In general, food, energy and changes in taxation are not included in the core index. As shown in the table below, several Central Banks report the core inflation following this approach.

Limited influence estimators are another methodology used to estimate core inflation. It consists in reducing the influence of the prices falling on the tails of the distribution of price variations, and has the advantage of avoiding arbitrary exclusions of components. Trimmed mean and weighted median are the most common estimates of this type.

More recently, some econometric techniques are being used to extract trend inflation, like filters to smooth observed inflation rate and structural VAR models to capture long-term inflation trends.

In Brazil, core inflation estimation is a recent topic and acquired importance after the introduction of the inflation-targeting regime. The first core inflation measures were published

¹ A review on this subject can be found in:

Roger, S. (1998). *Core inflation: concepts, uses and measurement*. Central Bank of New Zealand Working Paper 98/9.

Wynne, M. A. (1999). *Core inflation: a review of some conceptual issues*. European Central Bank Working Paper No. 5.

in the beginning of the year. As of March, Fundação Getúlio Vargas (FGV) releases a monthly measure of core inflation for the IPC-Br, using the trimmed mean technique². The Instituto de Pesquisa Economica Aplicada (IPEA), in its January Bulletin, presented some preliminary results for the IPCA core inflation using the methodologies of smoothing trimmed means, of extracting the common trends of the index components, and of extracting the common trends of several inflation indices.

Core inflation measures used by Central Banks

Country	Core measure
Australia	CPI less mortgage interest payments, government controlled prices and energy prices
Belgium	CPI less potatoes, fruit and vegetables
Canada	CPI less indirect taxes, food and energy items
Finland	CPI less housing capital costs, indirect taxes, and government subsidies
France	CPI less change in taxes, energy prices, food prices, and regulated prices
Greece	CPI less food and fuel
Israel	CPI less government goods, housing, fruit and vegetables
Japan	CPI less fresh foods
Netherlands	CPI less vegetables, fruit, and energy
New Zealand	CPI less commodity prices, government controlled prices, interest and credit charges
Philippines	A statistical trend line
Portugal	10% trimmed mean of the CPI
Singapore	CPI less cost of private road transportation and accommodation
Spain	CPI less mortgage interest payments
Sweden	CPI less housing mortgage interest and effects of taxes and subsidies
United Kingdom	Retail price index less mortgage interest payments
United States	CPI less food and energy items

Source: Bryan & Cecchetti (1999).

² The methodology used in their estimation can be found in the March 2000 edition of *Conjuntura Econômica*, pp. 16-20.