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Primer on Core Inflation

Core Inflation and Various Approaches to Core Inflation Estimation by Department of Economic Research, Bangko Sentral ng Pilipinas (BSP)

What is core inflation?

Core inflation is a widely-used measure of the broad or underlying trend or movement in the average consumer prices. Measures of core inflation aim to capture the permanent or long-run trend in the prices of consumer goods and

services by taking out the effects of temporary disturbances or shocks on the average consumer prices, generally referred to as the Consumer Price Index (CPI) ¹ inflation.

How is core inflation different from CPI or "headline" inflation?

In principle, the CPI or **headline inflation**, which refers to the rate of change in the overall CPI published by the National Statistics Office (NSO), aims to capture changes in peoples' cost of living based on the movements of the average price of a specified basket of commodities and services consumed by a typical Filipino household.

By contrast, core inflation excludes certain items in the overall CPI index

whose price movements are generally characterized by short-term volatile movements. Core inflation represents the long-term trend of inflation (as opposed to its short-term fluctuations) which can be directly affected by economic policy, specifically monetary policy. Core inflation serves as a useful complement to headline inflation by providing information about the long-term direction of consumer price movements and serving as an indicator of future inflation.

¹ The CPI 1 is a measure of the average price of a standard "basket" of goods and services consumed by the typical Filipino family. It is composed of various consumer items as determined in the nationwide Family Income and Expenditure Survey (FIES) conducted every six years by the National Statistics Office (NSO).

Why do we need to measure core inflation?

Headline inflation is often considered to be vulnerable to factors beyond the control of economic policy, and has tended to be historically volatile because of temporary shocks or disturbances in a particular area of the economy, causing it to move away from its long-term trend. In the Philippines, volatility in the headline inflation rate has been caused by various factors, such as disturbances in agricultural food supply or movements in international oil prices. Thus, there may be instances wherein the headline inflation rate has reached double-digit levels, even though majority of the prices of the CPI components are showing only mild increases. In such cases, the headline rate may no longer be a reliable indicator of the general trend in prices. An appropriately defined measure of core inflation can help identify the broader or underlying trend in prices.

This, in turn, could provide a better gauge of the overall state of the economy.

Equally important, temporary shocks in food and oil prices and other similar disturbances in headline inflation are usually associated with the supply factors. These factors tend to be outside the control of monetary policy, which focuses more on factors affecting aggregate demand.

Core inflation is also considered a good indicator of current and future trends in headline inflation. This helps policymakers determine whether current movements in consumer prices represent short-lived disturbances or is part of a broader permanent trend. Such knowledge is an important input to the formulation of economic policy, particularly monetary policy.

How is core inflation measured or computed?

There are a number of methods for estimating core inflation. The most common approach used by many countries is the exclusion method, which computes the core inflation by taking out the prices of a fixed, pre-specified set of items from the CPI basket. The excluded components are considered to be either volatile or susceptible to supply disturbances and would typically consist of food and energy items. This is based on the notion that the markets related with these goods are prone to supply shocks.

Some economists advocate the use of statistically-based methods that remove the impact of extreme or outlier price changes (both positive and negative) from

the overall inflation rate. The set of excluded items changes each month, depending on which particular items exhibit extreme price movements. The most common statistical measures of core inflation are the trimmed mean and weighted median. Both measures are derived from a highest-to lowest (or positive to negative) ranking of individual price changes for each given month. The trimmed mean measure takes the average inflation rate after excluding a specified percentage of extreme positive and negative price changes, while the weighted median simply takes the median inflation rate which corresponds to a cumulative CPI weight of 50 percent from the highest-to-lowest ranking.

How is core inflation measured or computed? (Continued)

It is also possible to use econometric techniques to estimate core inflation by estimating or calculating a statistical relationship between inflation and other relevant economic variables. The estimated regression model is then used to generate monthly estimates of core inflation using actual data for the other variables in the model.

In the Philippines, the official core inflation measure is computed using the

exclusion method. This approach was chosen for the following reasons: ease of construction; understandability by the general public; easy replication and verification by others; increased accountability and transparency of measurement; and timeliness. (A more detailed explanation on the choice of core inflation measure is explained in the latter part of this paper).

Cross-Country Experiences on Core Inflation

Do other countries monitor core inflation?

Yes. Most statistical authorities in other countries publish a measure of core inflation. Among central banks, it has become an international practice to monitor core inflation, irrespective of the monetary policy framework that they use.

For instance, non-inflation targeting central banks such as the US Federal Reserve, the Bank of Japan and the Monetary Authority of Singapore also monitor core inflation.

How do other countries measure core inflation?

The majority of countries employ the exclusion method and define core inflation as the overall price index net of the effects of shocks such as policy changes in taxes, exchange rate, interest rate and items, which exhibit seasonal patterns. The most common items excluded are food and energy since these items are considered traditionally as volatile components of the overall CPI basket. Canada, for example, excludes food, energy and the effects of indirect taxes, while the US excludes food and energy. Thailand's core inflation measure excludes raw food and energy prices, while the United Kingdom and New

Zealand exclude only interest charges. Peru excludes 9 volatile items—including food, fruits and vegetables, and urban transport—comprising about 21.2 percent of the CPI basket. Meanwhile, Chile uses a statistically-based approach and estimates its core measure by excluding both the largest 20 percent of negative price changes and the largest 8 percent of positive price changes.

Table 2 on page 6 summarizes the official core inflation measures adopted by other countries as well as the other core inflation measures used internally by their central banks.

How do policymakers use core inflation in other countries?

Most statistical agencies in other countries use core inflation as a supplementary indicator to headline inflation and publish it alongside the headline rate. Some inflation targeting

central banks—such as the central banks from Canada, Czech Republic, Finland, Thailand, South Africa and South Korea—use core inflation as the operating target for the conduct of monetary policy.

Towards an Official Definition of Core Inflation in the Philippines

Is there an official definition of Core Inflation in the Philippines?

Yes. There is now an official definition of core inflation in the Philippines. The National Statistical Coordination Board (NSCB) through NSCB Resolution No. 6 Series of 2003 has adopted an official definition and methodology for computing core inflation in the Philippines based on the exclusion

method. Thus, while headline inflation is calculated as the year-on-year change in the overall CPI compiled by the NSO, the official core inflation measure will be defined as rate of change of headline CPI after excluding selected food and energy items.

How was the official definition of core inflation determined?

The official definition is the output of an inter-agency technical discussions among the NSO, the NSCB, the National Economic Development Authority (NEDA), the Statistical Research and Training

Center (SRTC), the National Wage and Productivity Commission (NWPC), the Department of Trade and Industry (DTI), and the Bangko Sentral ng Pilipinas (BSP).

Why was the exclusion method chosen for the official definition?

The exclusion method was chosen because (1) it is easier to understand compared to the other methodologies; (2) it is more transparent and can be easily computed by anyone from CPI data; (3) it can be computed at the same time as the headline inflation rate; and (4) it is in accordance with the common international practice of excluding food-and energy-

related components of the CPI. Given that core inflation is a relatively new concept for the Filipino public in general, policymakers believed that the simplicity of the exclusion method can facilitate greater understanding by the public and consequently, help build credibility in the use of core inflation.

What specific items were excluded in order to estimate core inflation?

The items to be excluded from the definition of core inflation, based on the list of CPI components and their corresponding CPI weights (2000=100) are as follows:

- (a) Rice (9.4 percent)
- (b) Corn (0.9 percent)
- (c) Fruits & Vegetables (5.3 percent)
- (d) LPG (1.3 percent)
- (e) Kerosene (0.3 percent)
- (f) Oil, Gasoline and Diesel (1.3 percent)

Together, the above excluded items account for 18.4 percent of the CPI. The list of excluded items shall be reviewed by the NSCB Board and the Technical Committee on Price Statistics (TCPS) whenever the CPI data is rebased.

Which government agency will generate the official core inflation data?

The NSO will generate and publish the official rate of core inflation alongside the existing headline inflation rate.

Will core inflation replace the current CPI or headline inflation published by the NSO?

No. Core inflation is not intended as a replacement for headline inflation, but as a complementary indicator of the general movement in prices of goods and services.

Where does core inflation fit into the BSP's inflation targeting framework?

Under the BSP's inflation targeting framework, the annual inflation target is still defined in terms of the headline inflation rate. The BSP plans to use the official measure of core inflation as a complementary indicator of consumer

price movements. Thus, it would serve as an additional input to monetary policy analysis. Moving forward, the target inflation may be set in terms of the core inflation.

Is there any program that will help popularize the concept of core inflation?

To help prepare and familiarize the public with the concept of core inflation, a task force of the inter-agency committee on price statistics composed of NSO, BSP, SRTC and NSCB will be conducting an information campaign on core inflation

and its uses. The information drive will involve the distribution of informational materials and the conduct of presentations to the public in various areas of the country.

**TABLE 1 – Headline and Core Inflation Rates, Philippines:
July 2004 – July 2005
(2000 = 100; In %)**

YEAR/MONTH		Headline Inflation	Core Inflation	Differential (Percentage Points)
2004	July	6.6	6.2	0.4
	August	6.8	6.4	0.4
	September	7.2	6.6	0.6
	October	7.7	6.9	0.8
	November	8.2	7.6	0.6
	December	8.6	7.8	0.8
2005	January	8.4	7.9	0.5
	February	8.5	8.1	0.4
	March	8.5	8.0	0.5
	April	8.5	7.8	0.7
	May	8.5	7.6	0.9
	June	7.6	7.1	0.5
	July	7.1	6.8	0.3

Source of data: National Statistics Office (NSO).

TABLE 2 - Summary of the Official Core Inflation Measures Adopted by Other Countries as Well as the Other Core Inflation Measures Used Internally by their Central Banks

COUNTRY	Official Measure	Other Measures Used Internally by Central Bank
Canada	CPI excluding Food, Energy and Indirect Taxes	CPI excluding 8 most volatile items (16%) Weighted Median Trimmed Mean (15%)
Thailand	CPI excluding Fresh Food and Energy (23%)	Trimmed Mean (10%)
Australia	Treasury underlying CPI	Trimmed Mean Weighted Median
New Zealand	CPI excluding interest charges	
Singapore	CPI excluding costs of private road transport and costs of accommodation	CPI excluding volatile items (30%) Weighted Median Trimmed Mean (15%) Structural Vector Autoregression (VAR) model estimate
Japan	CPI excluding Fresh Food	
Peru	CPI excluding 9 volatile items (foods, fruits and vegetables, and urban transport, about 21.2%)	
United States	CPI excluding food and energy	
United Kingdom	Retail price index excluding mortgage interest rates (RPIX)	Weighted median Trimmed mean (15%)
Chile	CPI excluding 20% with higher (-) variations and 8% with higher (+) variations	
Colombia	CPI excluding indirect agricultural food, public services, and transport	
Germany	CPI excluding indirect taxes	
Spain	CPI excluding energy and unprocessed food (IPSEBENE)	
Netherlands	ULI minus fruits, vegetables, and energy	
Ireland	CPI (ULI1) less mortgage interest payments (MIPS) CPI (ULI2) excluding MIPS and food and energy	
Portugal	CPI (ULI) less unprocessed food and energy	

FOR INQUIRIES:

Regarding this report contact **TECHNICAL SERVICES DIVISION** at 527-9309

Regarding other statistics and technical services contact **BLES DATABANK** at 527-3577

Or Write to BLES c/o **Databank, 3/F DOLE Bldg. Gen. Luna St., Intramuros, Manila, 1002**

FAX 527-5506

E-mail: tsd@manila-online.net

Website: <http://www.manila-online.net/bles>