



## Measurement of Inflation and the Philippine Monetary Policy Framework<sup>1</sup>

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**F**or an inflation-targeting central bank, the choice of the price index should reflect the most informative price level in the decision-making process of economic agents. Ideally, it should also be an index that responds strongly to the instruments of monetary policy. Expectedly, each agent accords different levels of importance to different price indices. However, for purposes of policy setting, the inclusion of prices that are not sensitive to monetary policy or those that largely reflect relative price changes may lead to an unnecessary monetary policy reaction that only makes anchoring of price expectations more difficult.

### **INFLATION TARGET-SETTING IN THE PHILIPPINES**

**T**he inflation target-setting in the Philippines is based on the existing framework for coordination among government economic agencies under the Development Budget Coordinating Committee (DBCC). The DBCC is a government interagency body responsible for setting the annual government targets for macroeconomic variables used in the formulation of the fiscal program. Nonetheless, the jurisdiction over inflation forecasting and setting of appropriate inflation target that is consistent with the macroeconomic targets remains with the BSP. The National Government, through the DBCC, sets the inflation target based on the Consumer Price Index (CPI) two years ahead in consultation with the BSP. The BSP has full powers and responsibility over

the announcement of the inflation target and the determination of appropriate monetary policy to achieve the target.

The monetary policy framework provides for exemption clauses to recognize the fact that there are limits to the effectiveness of monetary policy and that occasional breaches owing to factors beyond the control of the central bank may happen. These exemptions include price pressures arising from: (1) volatility in the prices of agricultural products; (2) natural calamities or events that affect a major part of the economy; (3) volatility in the prices of oil products; (4) significant government policy changes that directly affect prices such as changes in the tax structure, incentives and subsidies. Thus, the communications strategy will have to carefully specify the reasons, plan of action and length of time involved to bring inflation back to target.

### **BASIS OF INFLATION TARGET**

**T**he price index used as the basis for determining the inflation target is the CPI. Consumer prices for a representative basket are compared to some base year levels and weighted by the appropriate consumption pattern. The determination of the base year and the composition of the basket are important, lest the CPI become irrelevant.

The use of the CPI as the basis for policy setting under inflation targeting is largely governed by pragmatic considerations. The frequency by which it is published and the fact that it is an index readily understood by the public rendered its adoption appealing. The GDP deflator, while output-based, is available only on a quarterly basis and is

<sup>1</sup> Abridged version of the paper for the BIS Deputy Governors' Meeting on Monetary Policy and the Measurement of Inflation held in Basel, Switzerland in February 2009

subject to the periodic revisions in the national income accounts. This makes it less reliable for target-setting purposes.

The CPI inflation also tends to be affected by the transitory effects of volatile price movements of certain commodities. Temporary shocks or disturbances that are due to factors outside the direct control of economic policy (e.g., oil price shocks) may cause fluctuations in CPI inflation that may not necessarily require a monetary response. Given this, the BSP also monitors “core” inflation to supplement analysis on the appropriate stance of monetary policy. One challenge that may occur for monetary analysis is if the movement of headline and core inflation diverges over time. This may occur through terms-of-trade shocks and divergent price movements across sectors. Many emerging economies, for instance, have experienced very large terms of trade shocks in recent years associated with sharp increases in oil and non-oil commodity prices that lasted for an extended period.

Simple tests for equality of means and variances of quarterly series for CPI headline inflation and CPI core inflation for the Philippines were conducted for two sample periods, 1994–2001 and 2002–2008Q2. The results failed to reject the null hypothesis of equal means and variances

for the two sub-sample periods as shown in Table 1. In addition, the correlation between headline and core CPI is at a high 0.95. Hence, there appears to be no added benefit to using core as the basis for target-setting.

Another possible measure of inflation are price series based on the national income accounts, referring to prices of commodities produced in the entire economy, namely, consumption, investment, government spending and exports less imports. One consideration here is how prices are decomposed among the different components. Thus, distortions may arise in quantity and price measurement, or the behavior of deflators or indices for GDP, domestic demand, consumption or investment may differ considerably. A GDP deflator may be a natural choice since it refers to the overall production of goods and services of the economy. The CPI, on the other hand, is mainly a measure of the cost of living, which can be a valid indicator as well.

Table 2 shows the correlation for different measures of inflation. The results show that the three commonly considered measures of inflation—headline CPI inflation, core CPI inflation and PGDP (GDP deflator) inflation—are highly correlated.

**Table 1**  
**Tests for Equality of Means and Variances of CPI Inflation and CPI Core Inflation**

	1994-2001	2002-2008.02
Test for equality of means (t-test)	0.4624	0.5165
Test for equality of variances (F-test)	0.3080	0.1867

**Table 2**  
**Correlation of Different Measures of Inflation**

	Headline CPI inflation	Core CPI inflation	GDP Deflator inflation
Headline CPI inflation	1.00	0.95	0.82
Core CPI inflation	0.95	1.00	0.84
GDP Deflator inflation	0.82	0.84	1.00

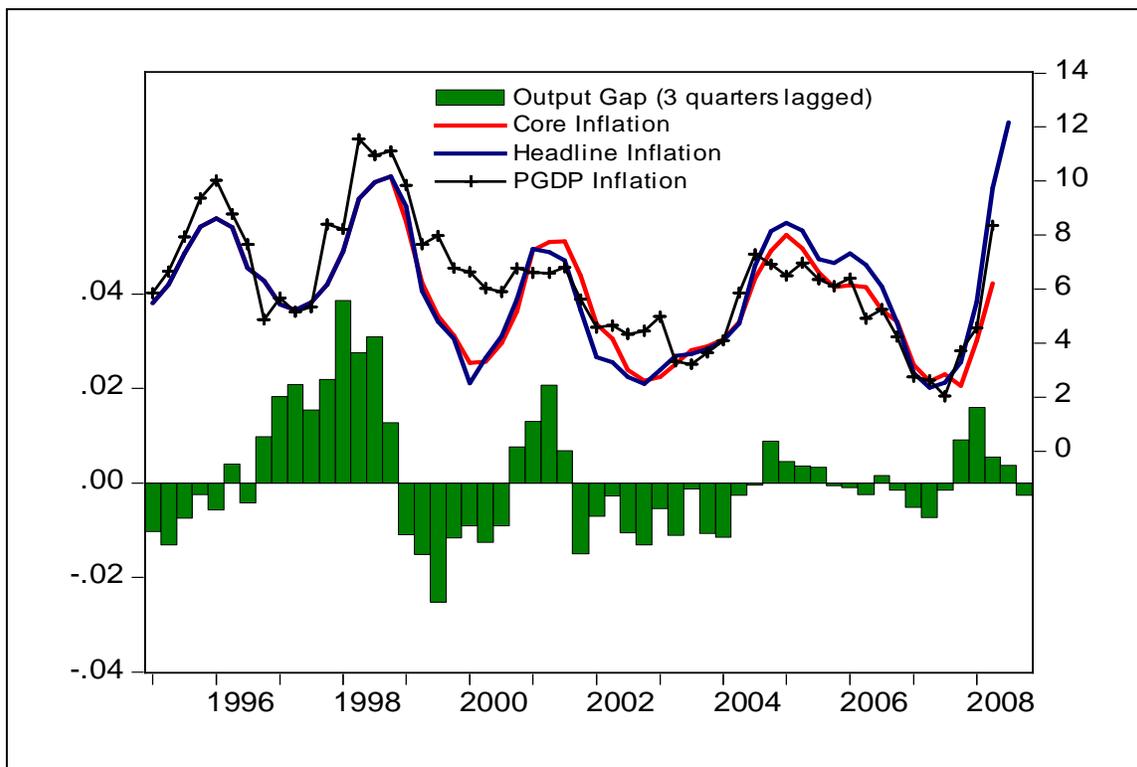
Sources of basic data: NSO and National Statistical Coordination Board (NSCB)

Note: GDP deflator from the National Income Accounts has been rebased to 2000=100 to make it comparable with the CPI and Core CPI.

However, the three measures of inflation deviate significantly from each other during the pre-inflation targeting period and the earlier phase of inflation targeting (see Figure 1). These correspond to the Asian financial crisis (1997Q4–2000Q4) and the dot-com bubble and US terrorist attacks in 2001Q4–2002Q4. In both periods, PGDP inflation exceeded both headline and core inflation rates. These periods were characterized by unfavorable external developments coinciding with constrained production capacity of the domestic economy. This was more pronounced during the Asian financial crisis when output gap was at its highest.

Near convergence was achieved in 2007, the year when the economy registered the best growth performance, lowest inflation and historically high external payments surplus. This growth performance was made possible by major structural reforms in the fiscal and financial sectors that restored confidence in the economy. However, the disinflation record was marred anew in 2008 by the extraordinary increases in global commodity prices as shown by the run-up in inflation.

**Figure 1**  
**Performance of Different Measures of Inflation (1995-2008Q2)**



Note: Output gap is calculated as the difference between actual GDP and trend GDP, derived using the Hodrick-Prescott filter. The use of 3-quarters lagged output gap is based on the estimated lags of monetary policy in the book by Bayangos, V. (2007). *Inflation Targeting and Exchange Rate Uncertainty*. Shaker Publishing BV, (Dissertation for the degree of Doctor of Philosophy in Development Studies. Institute of Social Studies, the Hague, the Netherlands).

## SUPERIORITY OF USING CPI

Despite the conceptual appeal of various price indices, headline CPI still has conceptual, operational and practical advantages over other price indices to be used as basis for inflation targeting in the Philippines. This is particularly important given the relatively short period of experience with inflation targeting. Furthermore, recent study on inflation expectations indicates that agents are still largely backward-looking as evidenced by the considerable inertia on how inflation expectations are formed.<sup>2</sup> Hence, an introduction of other price indices as basis for inflation target-setting may create confusion among the public, making the goal of anchoring inflation expectations more difficult. However, this does not preclude efforts to broaden the understanding of the relative importance of various price indices in analyzing inflation dynamics for monetary policy decision making, albeit not necessarily for setting the inflation target.

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<sup>2</sup> Bayangos, V., Basilio, J., Floro, D. and Glindro, E. Quantifying the Inflation Expectations Channel in the Philippines: Some Preliminary Results. BSP WP 2008-2 (forthcoming). Bangko Sentral ng Pilipinas.