

1

Box
Article

Inflation: Perception vs. Reality

Authors: Loke Po Ling and Farina Adam Khong

HIGHLIGHTS

- **Public scepticism on the CPI has increased as their personal experiences suggest larger increase in cost of living. However, cost of living and inflation are two different concepts, and public perceptions of inflation are subject to biases.**
- **Due to the biases, measures of perceived inflation were higher than CPI inflation, especially at times of rising inflationary pressures. This could influence public's expectations of future inflation, and in turn might change their consumption and investment decisions.**

"Perception is real, even when it is not reality" ~ Edward de Bono

In economics, there is always a fine line between perception and reality. Whether the official CPI inflation is a reflection of the actual change in cost of living is one of those pertinent issues. Despite the relatively low CPI inflation in the past two years (2016: 2.1%; 2015: 2.1%), the experiences of the general public suggest that the cost of living has risen more significantly. Hence, the ability of the CPI as a good indicator of changes in cost of living in the country is subject to scepticism.

The disconnect between the cost of living and the reported CPI inflation arises due to three factors. First, cost of living and inflation are two different concepts as highlighted in the Box Article: Inflation and Cost of Living in the Annual Report 2015. CPI inflation is computed based on a single basket of goods and services which reflects average consumption patterns of the Malaysian households, and average prices in the economy. To the extent there are differences in spending patterns and variations in prices at various locations, the overall CPI inflation would not reflect the individual cost of living. Based on staffs' estimates, the inflation rates across income groups and states were indeed different from the national average.

- Comparing across states, households in Kuala Lumpur experienced the highest inflation rate of 2.8% in 2016, which is higher than the national average of 2.1%.
- Comparing across income groups, households in the bottom 20% of the income group experienced inflation rates that were 0.12 to 1.12 percentage points higher than households in the top 20% of the income group. This is due to their higher share of expenditure on food, which generally experienced a higher rate of inflation compared to other goods and services¹.

As the CPI provides a good measure of the changes in the overall consumer price level in the economy, it is a relevant indicator for the conduct of macroeconomic policies, such as monetary policy, that aim to affect the broader economy.

Second, while CPI only considers the annual rate of change in prices of goods and services, the discussions on the issue of cost of living also take into account the income perspective. Households feel the pressure of rising cost of living not solely when costs increase, but when incomes do not rise in tandem, leading to an erosion of purchasing power.

¹ This is not unique to Malaysia and has been observed in other countries

Third, the public perceptions on price increases are also subject to several natural biases. This is because consumers have different information sets than the ones used to compute the CPI when forming perceptions. These information sets comprise initial beliefs, social interaction with other economic agents and life-time experiences. The biased perceptions could influence consumer's expectations of future inflation, and in turn would change consumption and investment decisions. In this regard, understanding public inflation perceptions is important so that central banks are able to develop effective strategies to anchor inflation expectations.

This article lists some of the factors driving the public's perception of inflation and subsequently provides quantitative measures of the perceived inflation. It also explains factors that led to divergence between the perceived and CPI inflation in the recent period.

Public perception of inflation is subject to biases

Public's perception of inflation is shaped by their personal experiences and is subject to two biases, namely, frequency and memory bias.

- Frequency bias: Consumers' views on inflation are predominantly driven by the price changes in items that are more frequently purchased. The frequently purchased items are non-durable items such as food and personal care items that typically experience higher rate of inflation.
- Memory bias: Consumers tend to remember price increases and disregard price declines.

To quantitatively gauge the level of inflation perceived by the public, two measures of perceived inflation are constructed, namely the Everyday Price Index (EPI)² and Perceived Price Index (PePI)³. These indices incorporate the frequency and memory biases.

i. Everyday Price Index (EPI) is an index that comprises frequently purchased goods and services (at least once a month) that incorporate the frequency bias. The index accounts for 60% of the CPI basket. It excludes infrequently purchased and big tickets items such as clothing, household appliances and holiday expenses. Items, for which prices are contractually fixed, such as rentals, are also excluded due to the less frequent variations in prices.

In the reweighted EPI basket, the food and non-alcoholic beverages category accounts for more than half (50.2%). Together with the transport category, these goods and services collectively account for 66% of the EPI basket. As a result, changes in prices of food and fuel products will greatly affect the EPI inflation.

Table 1: Weights in the CPI and the EPI baskets

Categories	CPI Weights	EPI Weights
Food & non-alcoholic beverages	30.2	50.2
Transport	13.7	15.8
Communication	5.2	7.8
Housing & utility	23.8	7.0
Recreation	4.9	5.9
Alcoholic beverages & tobacco	2.9	4.1
Restaurant & hotel	2.9	4.1
Miscellaneous	6.5	2.0
Education	1.1	1.6
Furnishing	3.8	1.5
Clothing & footwear	3.3	0.0
Health	1.7	0.0
Total	100.0	100.0

Source: Department of Statistics, Malaysia and staff calculation

² Vlasenko and Cunningham (2015).

³ By employing similar concept highlighted by Brachinger (2006).

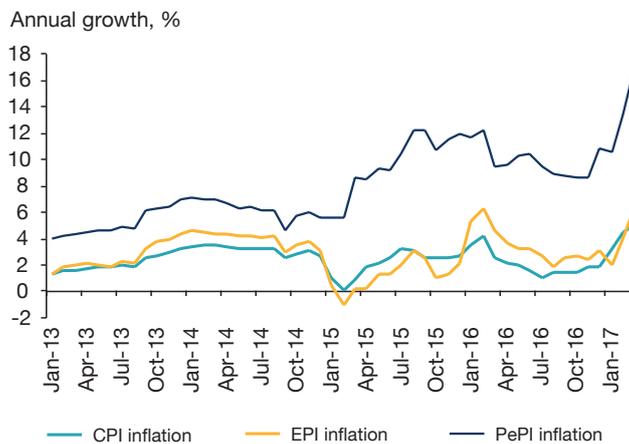
ii. **Perceived Price Index (PePI)** is a further refinement to the EPI, where it attempts to incorporate the memory bias in addition to the frequency bias. Items in PePI are exactly the same as EPI. However, the index will only capture price increases, as consumers tend to disregard price declines. Price indices that are registering declines are assumed to be unchanged.

Even in a low inflation environment, public perception of inflation has remained high given the perception bias

Comparing the measures of perceived inflation and the CPI inflation, EPI inflation was generally higher than the CPI inflation, indicating that prices of frequently purchased items were rising at a faster rate than the infrequently purchased items.

- Between July 2013 and December 2014, there were series of upward adjustments to administered prices such as prices of cigarettes, sugar and domestic fuel.
- In 2016, food inflation was exceptionally higher following the El-Nino phenomenon.
- The exception was in 2015 where the larger weight for the transport category exacerbated the negative impact from lower fuel prices, driving EPI inflation lower than CPI inflation.

Chart 1: Headline Inflation, EPI Inflation and Perceived Inflation



Source: Department of Statistics, Malaysia and staff calculation

PePI, inarguably, registers the highest rate of inflation.

- PePI was significantly higher than CPI inflation and EPI inflation. In 2015, the PePI inflation increased at a much faster pace due to the implementation of GST that led to broad-based price increases.
- In contrast, while CPI inflation and EPI inflation also increased during this period, the increase was relatively more modest as fuel prices were lower. The lower fuel prices, however, were not captured in PePI inflation.

Table 2: CPI, EPI and Perceived Inflation

Average annual growth, %	CPI	EPI	PePI
5-year average: 2012-2016	2.2	2.6	7.0
Increase in admin prices: July 2013 – December 2014	3.0	3.8	6.1
GST implementation: April 2015 – March 2016	2.8	2.6	10.8
November 2016 – March 2017	3.3	3.6	12.1

Source: Department of Statistics, Malaysia and staff calculation

Educating the public on inflation and clear communication on inflation outlook is important to anchor inflation expectations

By incorporating frequency and memory bias, the perceived inflation measures provides support to why the general public views actual inflation to be higher than the official CPI inflation. While this perception may not necessarily be the reality, the impact can be real as economic agents act upon their beliefs and make decisions on consumption and investment, which in turn would affect the economy. For example, expecting a significant increase in inflation, households may demand for higher wages beyond their productivity growth. This will lead to a second-round increase in prices and the consequent wage-price spiral. Alternatively, households could also cut down current consumption markedly in view of higher cost of living in the future. This, in turn, will lead to a slowdown in the overall economic activity.

Thus, correcting the perception biases is important to anchor inflation expectations. In this regard, efforts would be focused towards educating the public on inflation, how it is different from the cost of living, its computation as well as the importance of validating information used in making consumption and investment decisions. Information on the outlook and future trends of inflation would also be communicated to reassure the public that inflation will be kept low over the medium-term horizon.

References

AIER (American Institute for Economic Research) Staff. (2012). 'The Everyday Price Index', AIER Economic Bulletin, Vol. LII, February 2012.

Bank Negara Malaysia. (2016). 'Box Article: Inflation and Cost of Living', Annual Report 2015, 64 – 69.

Brachinger H. W. (2006). 'Euro or "Teuro"?: The Euro-induced Perceived Inflation in Germany', Department of Quantitative Economics Working Paper No.5, University of Fribourg Switzerland

Gulker M. (2016). 'Average American's Cost of Living Falls', AIER Research Brief 2.16.

Vlasenko P. and Cunningham S. R. (2015). 'Capturing the Inflation that People Experience: The Everyday Price Index vs. the Consumer Price Index', AIER Working Paper No. 004.