BANK OF CANADA

Measurement Bias

BACKGROUNDER

The *consumer price index* (CPI) has proven to be a reliable and widely accepted yardstick of price changes in the Canadian economy over the years. Nevertheless, all price indexes have their shortcomings, and the CPI is no exception. The potential “measurement bias” of the CPI is an important issue for research.

Tendency to overstate inflation

The CPI, like price indexes in other countries, may overstate increases in the cost of living because it cannot take into account a number of hard-to-measure factors.

One measurement bias in the CPI may occur because the quantities of the various items in the basket are fixed. Consumers can adjust to price changes by buying less of an item whose price has risen and more of a cheaper substitute. Statistics Canada attempts to take into account some of this adjustment by updating the contents of the CPI shopping basket every four years.

Bias may be introduced when prices rise because of a quality improvement in a product or service, rather than because of a pure price increase. For example, it is straightforward enough to monitor an increase in the price of bus tickets. But if the price has gone up because the frequency of the bus service has improved, the price change may be incorrectly viewed as a pure price increase.

Some problems are also introduced in the measurement of the CPI by the emergence of new discount retailers and warehouse stores. The full effects of the shift in consumer spending brought about by these outlets may not be reflected in the current CPI.

New products change buying habits

Biases may also occur in the CPI because of the introduction of new products to the market, such as new household appliances and electronic equipment. Typically these products show rapid declines in price in the first few years after they are introduced. New brands of existing products, such as a new cereal, also give consumers more choice to substitute items in order to help them reduce their cost of living. New products and increased variety in consumer choices are not always perfectly reflected in the CPI.

It is estimated that these potential measurement biases may overstate increases in the cost of living by about 0.5 per cent on an annual basis.

In the United States, a 1996 report estimated that inflation was overstated by an average of 1.1 per cent. Recent modifications to the U.S. index have reduced this to well under one per cent.