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Never Stand Still

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Economics

HOW MUCH DO OFFICIAL PRICE INDEXES TELL US ABOUT INFLATION?

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Overview

- CPI and PCE deflator measure inflation with error:
 - Index number formulae
 - Imperfect sampling
- Nikkei scanner data set, 1988 - 2010:
 - 4.82 billion daily price and quantity observations.
- Also uses detailed CPI data

Overview

- Törnqvist index taken as the target true measure of inflation.
- CPI data used to replicate the CPI constructed by SBJ.
- $\text{CPI index} = \text{true inflation} + \text{error}$

Overview

- Grocery items accounting for 20% of CPI.
- Argue that SBJ follows ILO methodology, so results extend to other countries.
- Upward average annual bias in official CPI of 0.63 percentage points, which is not constant over the sample.

Comments

- Target index based on matched items between comparison periods.
- Indexes constructed comparing the prices of the same month between two consecutive years.
- Annual index at monthly frequencies --- not a typical statistical agency approach!

Comments

- A large number of items disappear and appear in 12 months.
- US CPI Research Database: 3% of items disappear every month (Bils, Klenow and Malin, AER, 2012)
- Attrition rates higher in scanner data sets.
- From our experience, comparing on a yearly basis, less than two-thirds of items are matched.

Comments

- Paper provides no statistics on attrition rate in the data.
- New and disappearing items important because:
 1. Large proportion of total items.
 2. Account for large proportion of expd. in each period; sold at discount before disappearing, and consumers buy in large quantities when there's a sale.
 3. Price dynamics different from continuing items.

Comments

- Don't see how the target index can be considered the true measure of inflation when new and disappearing goods not included.
- With matched model methods, statistical agencies accommodate the price movements of new and disappearing items using:
 - direct quality adjustment methods
 - indirect quality adjustment methods (overlap and imputation methods).

Comments

- Present an index with base year 1993, but do not seem to explain how they compute this time series.
- That is, how to go from year over year Törnqvist indexes to month to month levels indexes?!
-Not obvious how to obtain such a series in a useful way from the inflation rates.

Comments

- Bias is described as being from sampling and formula error, but currently no decomposition into sources.
- Paper gives the impression that conventional wisdom is that bias in the CPI is a constant term. Haven't seen this claim before.

Comments

- “Official price indexes, such as the CPI, are imperfect indicators of inflation calculated using ad hoc price formulae different from the theoretically well-founded inflation indexes favored by economists.”
- Note that the Törnqvist index fails 9 out of 20 standard axioms from the axiomatic approach to index numbers.
- The Laspeyres index fails only three.
- Fisher passes all 20 and is superlative, so....?