

BAR-CODE SCANNERS OFFER A MORE ACCURATE AND COMPREHENSIVE MEASURE OF INFLATION

The measurement of inflation is no mean task: each month, price collectors visit stores in 146 locations to compile the Retail Prices Index (RPI), using hand-held computers to record around 110,000 prices of selected products, representative of the things we buy. But new methods could vastly increase this coverage - and the accuracy of the RPI in reflecting true cost of living increases - by using the data from bar-code scanners.

Research by Professor **Mick Silver** and Dr **Saaed Heravi** of Cardiff University, published in the latest issue of the *Economic Journal*, demonstrates the practical usefulness of such data. It shows, for example, that on the basis of scanner data collected by the market research company GfK Marketing Research - including 2,247 million transactions on television sets in one year for 1,300 different models in four types of store - the prices of television sets fell by about 13% in 1998.

The researchers point to a number of advantages of using scanner data to track inflation:

- First, they make the prices used for the RPI more representative.
- Second, they can take account of switches in the basket of what we buy as each month the basket changes with consumers substituting away from items with relatively high price changes to cheaper ones. For example, if the price of one make of television set rises faster than another, we buy less of it and the basket of the things we buy contains less of these higher priced items. The concern of the current RPI, however, is with price changes of a fixed basket of goods. Price collectors match prices in each month with a fixed set of items chosen at the start of the year, thus not taking account of this 'substitution effect'. This may overstate the cost of living. Should the Office of National Statistics wish to shift to a RPI that allows for such substitution, these data provide a means to do so.
- Third, the method of monitoring a fixed basket of items leads to 'sample depletion' as in February, March and onwards, until the next year and refreshing of the sample, new items are only included when existing ones drop out. Scanner data has a continuing comprehensive coverage. Yet the matching of items for the RPI guards against quality changes obscuring price changes. They carefully compare matched prices of like with like. The research shows how scanner data provides information on quality characteristics: for example, televisions can be defined by screen size, possession of wide-screen, fast-text, stereo, digital and more. Thus, as the quality of what we buy changes, statistical methods can be employed to adjust the prices accordingly. If the quality of what we buy is improving while prices are constant, there is a sense in which we are getting more for our money and this should be represented as a price fall.

Silver and Heravi's paper illustrates how scanner data for television sets show that, after taking into account quality changes and substitution effects, there was a price fall of about 13% in 1998.

Of course, scanner data is not suitable for measuring the prices of all that we buy. And if it is to be used, it requires careful exploration and analysis, including taking account of its cost-effectiveness. But the research shows how the revolution in information technology may benefit our indicators of economic life.

Notes for Editors: 'Scanner Data and the Measurement of Inflation' by Mick Silver and Saeed Heravi is published in the June 2001 issue of the *Economic Journal*. The authors are at Cardiff University though until September 2001, Silver is based at the Bureau of Labor Statistics in Washington DC: Room 3105, Bureau of Labor Statistics, 2 Massachusetts Ave NE, Washington DC 20212.

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