**ECONOMICS FOCUS**

**Economics focus**

# Sticky situations

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**Economists are learning more about a fundamental question: how often do prices change?**

FROM Washington to Wellington price stability is the desire of central bankers. Many of them have it, more or less: consumer-price inflation is 2.1% in America, 1.6% in the euro area, 2.4% in Britain and 0.6% in Japan. You might suppose that because the overall price level is not changing a lot, nor are individual prices. That is not necessarily so, as economists in both America and Europe are discovering.

How often individual prices move is an important question. Shifts in prices are like the traffic lights of an economy, signalling to people to buy more of this and less of that, to spend or to save, or to find new jobs. If the lights change readily, resources can be redirected smoothly; if they get stuck, so does the economy. In particular, if neither prices nor wages fall easily, the cost in output and jobs of reducing inflation can be high. Sticky prices also mean that an inflationary shock—an increase in oil prices, say—can take a long time to work its way through the system.

Although of great macroeconomic significance, the evidence on price stickiness lies in the microeconomic detail of thousands upon thousands of prices. Until recently, economists have known remarkably little about how often and by how much prices change, because the information needed is vast and often secret (ideally you want the numbers underlying consumer-price indices, for example, or readouts from supermarkets' scanners). Lately, however, several researchers have got their hands on useful data, and have been sifting them.

Most of the early work was done in America, and much of it looked at the prices of only a few things, such as magazines on news-stands or mail-order goods. It concluded that these prices changed only about once a year. However, a paper published in 2004 by Mark Bils, of the University of Rochester, and Peter Klenow, of Stanford University, found that most prices change more often. Messrs Bils and Klenow used data on 350 goods and services collected by the Bureau of Labour Statistics for calculating the consumer-price index. They reckoned that in 1995-97 half of these prices changed at least every four or five months.

New research by Emi Nakamura and Jon Steinsson, both graduate students at Harvard, points out the importance of sales and special promotions in the frequency of American price changes. Sales are much more common in some markets than in others, accounting for 87% of price changes for clothes (think of clearance sales), 67% in furniture (all those half-price sofas) and 58% in processed food (baked beans are on special offer again), but none in vehicle fuel or utilities and scarcely any in services (when did your lawyer last offer you a discount?). After the effects of sales and special offers were stripped out, the median duration of retail prices lay between eight and 11 months in 1998-2005. Including sales cuts the duration by half, bringing the results roughly into line with those of Messrs Bils and Klenow. It also matters, but only a bit, that Ms Nakamura and Mr Steinsson studied a later period, when inflation was slightly lower: they note that high inflation leads shops to raise prices more often.

## What price a flexible Europe?

The evidence from the euro area, fruit of a three-year project co-ordinated by the European Central Bank and completed this year, suggests that prices there change less often than in the United States. The European economists found that retail prices change every four or five quarters. Removing the effects of cut-price sales, where data were available, made little difference: sales, it seems, matter much less than in America. That result fits in with the common view of the euro zone as having a less flexible and nimble economy than America. Nevertheless, Europe is far from rigid: more than 40% of the price changes recorded were cuts, much the same as estimates for the United States. Price changes in Europe, when they happened, tended to be big, whether up or down: the average increase was 8% and the average cut 10%, against inflation of 2% or so. Changes in American prices, in both directions, are also much larger than the overall inflation rate.

On both sides of the Atlantic the frequency of price changes varies enormously. Generally speaking, the greater the share of raw materials in a product, the more often its price moves: petrol prices change, on average, in five months out of six in both America and Europe; the prices of fresh food are altered far more frequently than those of processed food. The prices of services are stickier than those of goods. This may be because services tend to be more labour-intensive than goods, and because wages are stickier (downwards, anyway) than other prices. This seems to be especially true in Europe: the continent's labour markets are gummier than America's and services are more regulated. Less than 6% of the service prices in the euro-zone research change each month. In America Messrs Bils and Klenow put the frequency at around 20%; Ms Nakamura and Mr Steinsson say 44% for travel and 9% for other services. However transatlantic comparisons are clouded by differences in the services covered.

What can monetary policymakers learn from this research? By and large, they should probably be heartened by it, and not only because it tells them a great deal about how their economies work. The European economists say that inflation has become less persistent over time, as monetary policy has become concentrated on price stability and on keeping inflationary expectations low. And the evidence on price stickiness may make central bankers on both sides of the Atlantic more confident of keeping inflation low—in theory, a hard task if prices rarely fall. The research suggests that prices fall fairly often: central banks as well as consumers can give thanks for all those cut-price tins of beans.

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**SOURCES**

Mr Bils's and Mr Klenow's paper, "Some Evidence on the Importance of Sticky Prices", appeared in the *Journal of Political Economy* in 2004. A PDF version can be found here. Ms Nakamura's and Mr Steinsson's paper, "Five Facts About Prices: A Reevaluation of Menu Cost Models" is online. This article draws on the version dated November 6th 2006. The European research on price stickiness can be found in several papers on the European Central Bank's website. The main results are summarised in "Price Changes in the Euro Area and the United States: Some Facts from Individual Consumer Price Data", by Emmanuel Dhyne and others (*Journal of Economic Perspectives*, Spring 2006) and in "Inflation Persistence in the Euro Area: A Summary of the Inflation Persistence Network Evidence", by Filippo Altissimo, Michael Ehrmann and Frank Smets (National Bank of Belgium working paper no.95, October 2006). This was presented at a conference on price and wage rigidities at the NBB in October. The other papers are also on the bank's website.