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Price rigidity at near-zero inflation rates: evidence from Japan

Kota Watanabe, Canon Institute for Global Studies and University of Tokyo
Tsutomu Watanabe, University of Tokyo

A notable characteristic of Japan's deflation since the mid-1990s is the mild pace of price decline, with the CPI falling at an annual rate of only around 1 percent. Moreover, even though unemployment increased, prices hardly reacted, giving rise to a flattening of the Phillips curve. In this paper, we address why deflation was so mild and why the Phillips curve flattened, focusing on changes in price stickiness. Our first finding is that, for the majority of the 588 items constituting the CPI, making up about 50 percent of the CPI in terms of weight, the year-on-year rate of price change was near-zero, indicating the presence of very high price stickiness. This situation started during the onset of deflation in the second half of the 1990s and continued even after the CPI inflation rate turned positive in spring 2013. Second, we find that there is a negative correlation between trend inflation and the share of items whose rate of price change is near zero, which is consistent with Ball and Mankiw's (1994) argument based on the menu cost model that the opportunity cost of leaving prices unchanged decreases as trend inflation approaches zero. This result suggests that the price stickiness observed over the last two decades arose endogenously as a result of the decline in inflation. Third and finally, a cross-country comparison of the price change distribution reveals that Japan differs significantly from other countries in that the mode of the distribution is very close to zero for Japan, while it is near 2 percent for other countries including the United States. Japan continues to be an "outlier" even if we look at the mode of the distribution conditional on the rate of inflation. This suggests that whereas in the United States and other countries the "default" is for firms to raise prices by about 2 percent each year, in Japan the default is that, as a result of prolonged deflation, firms keep prices unchanged.