Output-Inflation Trade-Off at Near-Zero Inflation Rates

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The purpose of this paper is to provide new evidence about the cost of near-zero inflation using Japanese data. We test the hypothesis that the short-run Phillips curve becomes flatter as the rate of inflation approaches zero. In implementing the test, we pay special attention to how to control for other factors affecting the rate of inflation. First, we use the skewness of the distribution of relative-price changes as a measure of supply shocks. Second, we use information contained in the cross-prefecture Phillips curve to control for changes in the expected rate of inflation. Through a series of empirical analyses, we find evidences consistent with the hypothesis. In particular, we find that the estimated slope in the 1990s is smaller than before. J. Japan. Int. Econ., December 2000, 14(4), pp. 304–326. Research and Statistics Department, Bank of Japan and Institute of Economic Research, Hitotsubashi University. © 2000 Academic Press

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1. INTRODUCTION

The Japanese economy has been experiencing disinflation since the beginning of the 1990s when the bubble in stock and land prices burst. For example, year-to-year inflation rates measured by the Consumer Price Index have been gradually declining since the first quarter of 1991. CPI inflation rates were negative in the second and third quarters of 1995, and were in the narrow range of 0 to 1% in 1996 and 1997. More recently, year-to-year CPI inflation rates have been negative since the third quarter of 1998. In addition, the rate of wage inflation has been negative since early 1998.

Looking back at the movements of the Japanese CPI inflation rates in the postwar period, we find that near-zero inflation rates are a very rare phenomenon. During only three years were the inflation rates negative, namely 1950, 1955, and 1958. For these three years, however, it was commonly observed that inflation rates increased again soon after they recorded negative values. The present situation is different from these instances in that inflation rates have been staying at a near-zero level for about five years and there are no indications of it increasing. Moreover, it is difficult to find a comparable example in the experiences of other industrial countries during the postwar period. For example, the German economy experienced negative rates of inflation at the final stage of the hyperinflation, but it was just a one-year event.

Researchers often point out that the Japanese inflation rates are too low. Their argument is based on the following cost–benefit analysis of low inflation. That is, it is no doubt that high inflation, say 100% a year, deteriorates the national welfare. In such a situation, a reduction in the rate of inflation to, say 10%, would significantly improve the national welfare. However, applying the same argument to the case of reducing inflation from 3% to zero is misleading. This is because the marginal benefit of reducing inflation is decreasing as the starting rate of inflation becomes lower. For instance, the shoe-leather costs in an economy with 3% inflation are negligible and significant reductions cannot be expected, even if the inflation rate were reduced to zero. On the other hand, there is enough reason to believe that the marginal cost of disinflation increases as the starting rate of inflation becomes lower. For example, if downward rigidity in nominal wages exists, the slope of the short-run Phillips curve becomes smaller as the inflation rate approaches zero. Combining the two, the marginal cost of reducing inflation exceeds the marginal benefit at some positive rate of inflation, and therefore,

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2 CPI inflation rates increased in April 1997, when the consumption tax rate was increased by 2%. The description in the text is based on the figure that is adjusted for this effect. See the Bank of Japan monthly report for adjusted figures.

3 Going back to the interwar period, persistent near-zero inflation was an everyday event; even persistent declines in the price level, deflation, were not a rare phenomenon. Given the difference in the currency system, particularly the international currency system, however, a simple comparison would be misleading.

4 See, for example, Fischer (1996), Krugman (1996), and Akerlof et al. (1996).
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