

## Comment on “Chronic Deflation in Japan”

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Nishizaki *et al.* (2014) have provided a comprehensive survey of the factors that may have contributed to the phenomenon of chronic deflation in Japan. Indeed, this topic is highly relevant for monetary economists and policymakers, not only for understanding specific developments in Japan, but for shedding light on the evolution of inflation expectations and the dynamics of actual inflation in advanced economies more generally. I will focus this comment on highlighting a few key lessons and underscoring several significant issues that merit further research.

Central banks have a fundamental responsibility to *establish and maintain a nominal anchor* for the economy, which may be expressed in terms of the price level, the exchange rate, or some other nominal variable. In that regard, this paper provides a very useful chronology of the Bank of Japan’s (BoJ) communications over the past two decades regarding its formulation of the nominal anchor. As of 1996, the BoJ’s stated intention was “preventing inflation or deflation of domestic prices,” in effect keeping the true underlying rate of inflation close to zero and hence aiming at modestly positive levels for published measures of inflation. In 2006, the nominal anchor was framed more specifically in terms of year-to-year changes in the consumer price index (CPI), and BoJ communications pointed to a value of 1% as the midpoint of policy board members’ views. In 2012, the BoJ announced an explicit numerical inflation goal of 1% “for the time being,” and earlier this year the goal was revised upwards to 2%.

In analyzing the early experience of several inflation targeting central banks, Bernanke *et al.* (1999) found that the private sector’s *longer term inflation expectations tend to move only gradually* in response to the announcement of an explicit inflation target. Moreover, such patterns do not necessarily reflect sluggish information flows or irrationality; rather, even professional forecasters tend to take a “wait-and-see” approach in assessing the extent to which a significant institutional change is likely to be durable over time (Evans & Wachtel, 1993). As shown in Nishizaki *et al.*’s (2014) figure 4, these considerations appear to have been relevant at several key phases of the Japanese experience. In particular, Consensus Forecast surveys indicate that longer run inflation

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expectations declined gradually to around 1% during the 1990s and then remained fairly close to that level during the 2000s, even though headline inflation was negative over much of the latter period. Most recently, surveys of professional forecasters suggest that longer run inflation expectations remain entrenched at about 1% despite the BoJ's highly visible revision to its inflation goal.

A number of empirical studies have examined the *responsiveness of inflation to measures of real economic activity* and have concluded that the degree of sensitivity has declined significantly over recent decades in many advanced economies, including Japan (DeVeirman, 2009; Matheson *et al.*, 2013). That conclusion seems consistent with the evidence shown in the upper-left panel of Nishizaki *et al.*'s (2014) figure 2, namely, core CPI inflation appears to have been much less sensitive to the output gap over the period since 2000 relative to its behavior during the 1990s.

Although macroeconomic analysis has typically focused on linear models of inflation, there might well be *substantial nonlinearities at very low rates of inflation* (Debelle & Laxton, 1997; Musso *et al.*, 2007). Of course, such mechanisms may be difficult to identify using aggregate time series, and hence further progress along this line of research will likely involve analysis of sectoral or perhaps even firm-level data. Moreover, some empirical analysis points to recent *attenuation in the pass-through of exchange rate movements into domestic prices*. This issue may be very relevant for the conduct of monetary policy, especially in gauging the extent to which further movements in the exchange rate may be required in order to achieve the central bank's inflation goal (Svensson, 2003). Finally, one particularly intriguing aspect of this paper is the evidence presented in Nishizaki *et al.*'s (2014) figure 5, which depicts the evolution of press coverage involving the term "deflation." Such analysis could help gauge the reactions of various subgroups of the population and thereby shed further light on public perceptions regarding *distributional effects of alternative levels of inflation*.

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