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# Quantitative easing works: Lessons from the unique experience in Japan 2001–2006

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ABSTRACT

The current financial crisis has now led most major central banks to rely on quantitative easing. The unique Japanese experience of quantitative easing is the only experience which enables us to judge this therapy's effectiveness and the timing of the exit strategy. In this paper, we provide a new empirical framework to examine the effectiveness of Japanese monetary policy during the "lost" decade and quantify the effect of quantitative easing on Japan's activity and prices. We combine advantages of Markov-switching VAR methodology with those of factor analysis to establish two major findings. First, we show that the decisive change in regime occurred in two steps: it crept out from late 1995 and established itself durably in February 1999. Second, we show for the first time that quantitative easing was able not only to prevent further recession and deflation but also to provide considerable stimulation to both output and prices. This positive effect is reached through the interest rate factor. These results remain valid even when fiscal policy is simultaneously taken into account in the analysis. If Japanese experience is any guide the quantitative easing policy must be seen as a symptomatic treatment; it must be accompanied with a dramatic restructuring in the financial framework. The exit from quantitative easing must be postponed and decided within a clear program and according to clear numerical objectives.



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## 1. Introduction

The current financial crisis has now led most major central banks to rely on quantitative easing. The unique Japanese experience of quantitative easing is the only experience which enables us to judge this therapy's effectiveness and determine the appropriate timing of the exit strategy. It is widely believed that during the "lost" decade in Japan, characterized both by stagnation and by deflation, monetary policy was all but impotent. Available academic work concludes that quantitative easing, based on flooding banks with base money, did not manage to stimulate activity or revive inflation.

The empirical study of output and price effects of monetary policy using the workhorse in macroeconomic time series analysis, i.e. VARs (vector auto-regressive models), has been a very intensive area of research over the last decade (Sims et al., 1990; Sims and Zha, 1998; Bagliano and Favero, 1998, and many others). Such works have usually put a lot of emphasis on the interest rate as the monetary policy transmission channel. However, in the case of Japan, when the zero lower bound on short-term interest rates is reached, the room for further stimulus using a short-term interest rate instrument is constrained. Recent researches, dealing with the issue of the zero-bound for nominal interest rates, argue that it is still possible to conduct more accommodative monetary policies to affect the aggregate demand and prices. The neo-Wicksellian approach for monetary policy analysis mostly focuses on alternative policies to affect expectations of future short-term interest rates. Krugman (2000) and Eggertsson and Woodford (2003) argue that a zero interest rate commitment influences expectations for the future path of the call rate, and then leads to reduce medium- to long-term interest rates. However, the monetarist approach suggests that the focus should be on portfolio-rebalancing channel. Metzler (1995) argues that, given the imperfect substitutability of different financial assets, a massive increase in the monetary base could lead the private sector to adjust its portfolio lowering yields on non-monetary assets. By implementing the quantitative easing monetary policy (henceforth QEMP), by the Banque of Japan (BOJ) in March 2001, the monetary policy instrument was changed to current account balances (henceforth CAB) held by commercial banks with the BOJ. Two transmission channels for the QEMP have been suggested.[2] The first is the expectation channel, consisting of policy-duration (Krugman, 2000; Eggertsson and Woodford, 2003) and signaling effects, and the second is the portfolio-rebalancing channel (Metzler, 1995).

On the other hand, the Bank of Japan holds a large fraction of long-term bonds on its balance sheet. About 60% of Japanese moneatry base is backed by long-term government bonds. This measure seems to be in line with Bernanke (2003)'s recommandation. Bernanke (2003) suggests that the BOJ dramatically increases its purchases of Japanese government bonds. This measure would not only lead to a monetary expansion, but would also enable the government to carry out greater fiscal stimulus without increasing the private sector's future tax burden. Moreover, Eggertsson (2003) argues that if government and the central bank were to cooperate in an attempt to avoid the deflationary trap, this would create inflation expectations in the private sector and lead to a rise in output. Therefore, Eggertsson (2003) interprets the lack of inflation despite the large quantity of JGB issuance under zero interest rates as evidence of lack of cooperation between Treasury officials and the central bank. Now the policy question of major importance is to check whether results related to the monetary policy effectiveness change when the fiscal policy is simultaneously taken into account.

In addition, instabilities in the transmission mechanisms of monetary policy are very likely, particularly in the case of Japan. In a standard stochastic model, Orphanides and Wieland (2000) show that, when inflation is lower than 1%, non-linearities in the transmission process of monetary policy arise solely from the presence of the zero bound on nominal interest rates. Indeed, these effects become increasingly important for determining the outcome of monetary policy in circumstances with such low inflation rates. On an empirical level, accounting for regime shifts should be a major concern when examining the transmission mechanisms of monetary policy (Miyao, 2000; Fujiwara, 2006; Inoue and Okimoto, 2008; Nakajima et al., 2009a).

[2] There are several possible ways to classify transmission channels. See also Ugai (2007).