The Effects of Monetary Policy Announcements at the Zero Lower Bound

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What is the question?

Is there any difference between countries applying unconventional policies at zero lower bound?

Why should we care this?

Recently, it is more and more common for central bank to provide unconventional policies at zero lower bound to stimulate economic downturn. However, there are lots of debuts about the feasibilities and outcomes. In contrast to most literature focuses on the US data from 2008, the paper analyzes the ZLB effect in Ja5pan, which has undergone ZLB since 1995. What we care is that if there does exist difference between the countries, what are the key factors. Investigating the reasons helps us understand the unconventional monetary policy more and hence form a general idea about the results.

What is the answer?

The difference result does exist. In US, the effect of expansionary monetary policy shocks is directly passed on to corporate bond yields, stock prices and the exchange rate. On the contrary, in Japan, it is passed on corporate bond yields and the effects on both stock prices and the exchange rate are not statistically significant.

The reasons are as follows:

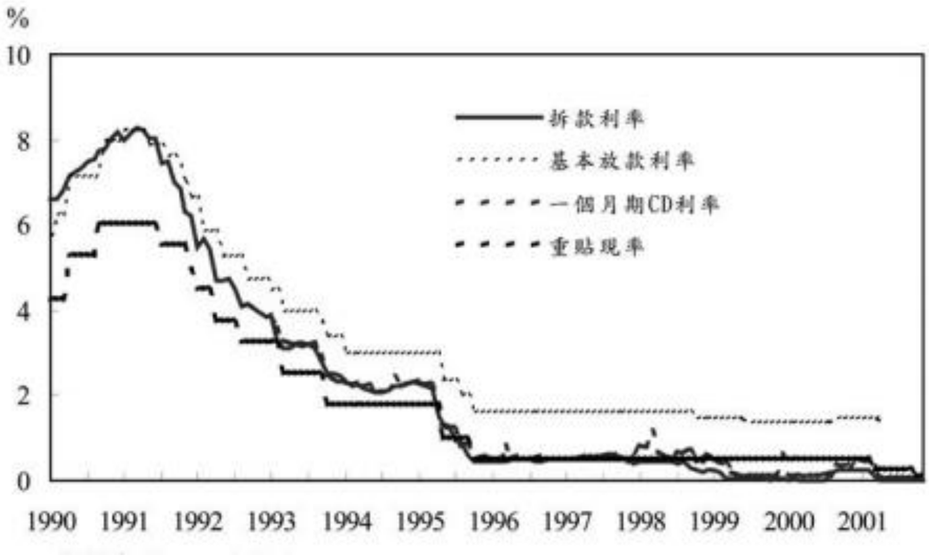
1. The Financial Markets: Japanese financial markets may be more segmented than the U.S. markets and may not be responsive to monetary policy shocks.
2. The Economic Environment: Japanese economy has been stuck at the ZLB for two decades, it would be extremely difficult for any announcement to change expectations about future inflation or short rates.

How did the author get there?

Estimate the pass-through of monetary policy shock by the method of identification through heteroscedasticity. Identification is based on the assumption that the variance of monetary policy shocks is only extremely large on the day of policy announcement.

Example

Japan rediscount rate was still at abot 6% at Aug,1990 ;however, it was lower and lower since 1991 to stimulate the depressed situation and it went to 0.5% at Sep,1996.



Resource: Bank of Japan

Notations

i_t	interest rate
s_t	growth rate of asset price
X_t	common shock for both interest rate and asset price
ε_t	monetary policy shock
η_t	asset price shock
A	a subset of the policy announcement day
$\bar{A}$	a subset of the policy non-announcement day
T_A	the number of announcement days
$T_{\bar{A}}$	the number of non-announcement days
Ω_A	the conditional variance-covariance matrix of announcement days
$\Omega_{\bar{A}}$	the conditional variance-covariance matrix of non-announcement days
$\sigma^2_{\varepsilon\|A}$	the conditional variance of monetary policy shocks on the announcement days
$\sigma^2_{\varepsilon\|\bar{A}}$	the conditional variance of monetary policy shocks on the non-announcement days

$$\Delta i_t = \beta \Delta s_t + \gamma X_t + \varepsilon_t,$$

$$\Delta s_t = \alpha \Delta i_t + \delta X_t + \eta_t,$$

$$\Delta \Omega \equiv \Omega_A - \Omega_{\bar{A}} = \frac{\sigma^2_{\varepsilon|A} - \sigma^2_{\varepsilon|\bar{A}}}{(1-\alpha\beta)^2} \begin{pmatrix} 1 & \alpha \\ \alpha & \alpha^2 \end{pmatrix}$$

$$\mathbf{\Delta i} \equiv [\mathbf{\Delta i}_A, \quad \mathbf{\Delta i}_{\bar{A}}]',$$

$$\mathbf{\Delta s} \equiv [\mathbf{\Delta s}_A, \quad \mathbf{\Delta s}_{\bar{A}}]'$$

$$\mathbf{z_i} \equiv \left[\frac{1}{T_A}\mathbf{\Delta i}_A, \quad -\frac{1}{T_{\bar{A}}}\mathbf{\Delta i}_{\bar{A}}\right]'$$

$$\mathbf{z_s} \equiv \left[\frac{1}{T_A}\mathbf{\Delta s}_A, \quad -\frac{1}{T_{\bar{A}}}\mathbf{\Delta s}_{\bar{A}}\right]'$$

$$f_t(\alpha) = Z_t \cdot e_t,$$

$$Z_t = [z_{i,t}, \ z_{s,t}]',$$

$$e_t = \Delta s_t - \alpha \Delta i_t$$