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Bad Loan Problems and the Financial Market

Financial Adjustment Indicators show...

Current Account Deposit at BOJ had effect on Term Rates.

Need to expand the definition of Monetary Base.

(Summary)

1) Not only bank reserves, but also all Bank of Japan current accounts including those deposits held by institutions not subject to reserve requirements can influence the term rates such as 3-month CD rates. The definition of monetary base should therefore be expanded to include all current accounts that are not subject to the reserve requirements.

2) Despite the "zero interest rate policy" that has been in effect for some time, real interest rates have not fallen sufficiently. In order to rebuild public finances as well, we need to set the economy on a path of recovery through a "good" rise in interest rates by setting a medium term inflation rate target and easing money even further.

Since the burst of the economic bubble, the Bank of Japan has followed a consistent path of a relaxed monetary policy. The Bank of Japan has lowered interest rates nine times since 1991, and the official discount rate now stands at 0.5%. Furthermore, from July 1995 to September 1998, the Bank of Japan has, through market operations, directed the non-collateralized overnight call rate to be slightly lower than the official discount rate. However, this conventional policy of easing money by lowering the official discount rate and directing the overnight call rate to be lower than the discount rate, did not work effectively when the economy was faced with the financial depression in Autumn 1997. The Bank of Japan had no alternative but to ease money even further, which led to some changes in the nature of their financial adjustments. In this discussion, we analyze how the Bank of Japan altered their position with respect to these financial adjustments in this financial depression, and how short-term interest rates reacted to these changes.

In 1997, the Asian economic crisis and the collapse of some major financial institutions in Japan led to a rapidly growing anxiety towards the financial system. Banks reacted by radically tightening their lending attitudes. This led to not only the so-called "credit crunch", but it did not stop there, and evolved into a competition among the banks to recover their loans. Because the cash positions of the financial institutions themselves had deteriorated, it was not enough that they recover their bad loans; the pressure was on for them to recover loans from even their best customers. Lending became so tight that business fixed investment, particularly for the small and medium-sized enterprises, shrank by a wide margin, which then led to lower profit levels and more unrecoverable loans for the banks. The situation became a vicious circle, as the owner's equity of the banks was very low, resulting in the risk of bankruptcies, and intensifying the anxiety in the sector even further.

In this kind of dire situation, the ripple effects of any monetary easing become greatly compromised. With the credit risk of the financial institutions at such high levels, risk premiums also increased. Even if the Bank of Japan were to stabilize the call rate at

low levels, there would be upward pressure on 3-month CD rates (hereafter referred to as "term rates"), which are short-term rates of longer than the overnight call rate. In order to lower the term rates and ensure the smooth lending operations of the financial institutions, a new kind of financial adjustment policy was necessary. This was the "zero interest rate policy" which was implemented from February 1999 and which progressed from the "lower interest rate policy" that had been in effect from September 1998.

In order to understand the relationship between the financial adjustment position of the Bank of Japan, and short-term interest rates, we need to create an indicator that quantifies the Bank of Japan's position. Rather than dealing with the day-to-day movements in the markets, we consider the concept of "pace of accumulating required reserves" as a starting point. The "pace of accumulating required reserves" indicator is defined as follows: the cumulative total of the amounts deposited from the first day of the reserve maintenance period divided by the total of the required reserves in the same period (the daily average required, multiplied by the number of days). This indicates how much of the amount required to be deposited has actually been deposited by that particular day in the reserve maintenance period.

In Figure 1, we have taken the reserve maintenance period on the horizontal axis, and the pace of accumulating required reserves on the vertical axis. From this, the following can be observed: When the financial institutions as a whole deposit their reserves at an average rate, i.e., they deposit about the same amount everyday equivalent to the average required amount, the curve showing the pace of accumulating required reserves becomes a straight forty-five degree line from the origin, reaching 1 on the final day of the period. When the pace of accumulating required reserves is high due to an easing financial adjustment position, the curve is above the forty-five degree line, and when financial adjustment is tight and financial institutions are slower to deposit their required reserves, the curve falls beneath it.

Conventionally, financial institutions would deposit as little of their required reserves as possible, because this account bears them no interest, and the pace of accumulating required reserves would reach 1 only on very last day of the period. (Shown on the left side of Figure 1). However, since the autumn of 1997, financial institutions began to have excess reserves on the final day of the reserve maintenance periods, and so the pace of accumulating required reserves would actually exceed 1 (Right side of Figure 1). Therefore, from the shape of the curve, we can deduce what kind of financial adjustment position was being taken in each period.

Next, in Figure 1, we take the logarithm of the area bound by the curve depicting the pace of accumulating required reserves and the horizontal axis divided by the triangle area bound by the forty-five degree line (i.e., the average pace of accumulating required reserves) and the horizontal axis. When the adjustment position is neutral, this figure will be zero. When the adjustment position is eased, the figure will be positive, and when the position is tight, it will be negative. This gives us an indicator of the Bank of Japan's financial adjustment position.

When calculating this financial adjustment indicator, we generated two types. The first one, "Financial Adjustment Indicator 1" dealt only with the required reserves deposited. The second one "Financial Adjustment Indicator 2" dealt with all current account deposits at the Bank of Japan (includes required reserves plus other current accounts held by financial institutions such as tanshi companies (money market broker-cum-dealers) not subject to the reserve requirement). These two indicators, and their relationship with the short-term interest rate are shown in Figure 2. The top half shows the movement of the interest rate, while the bottom half shows the movement of the Financial Adjustment Indicator (the lower it falls, the easier the adjustment position). From this graph, we can conclude the following: 1) after the financial crisis of the autumn of 1997, the financial adjustment position has been eased by a large degree. 2) The position has changed twice. Once after the autumn of 1997 when the "Financial Adjustment Indicator 1" took a big step in the direction of easing (excess reserves were allowed), and the second time from February of 1999, when the "Financial Adjustment Indicator 2" fluctuated in the direction of easing. There was an increase in the total amount outstanding of current account deposit at the Bank of Japan, held by institutions not subject to reserve requirements. 3) During this period of easing, the overnight call

rate has been either stable at low rate, or have been falling. 4) The term rates such as 3-month CD rates have been stable at high levels while the excess reserves have been allowed, and there have been stages when the rates have even risen.

After this, the term rates fell for the first time, because the Bank of Japan's "zero interest rate policy" created a supply of funds so great that even those institutions not subject to the reserve requirements had large balance in the current account deposit at the Bank of Japan. This became a normal condition in that environment.

The above conclusions can also be supported by regression analysis; the official discount rate and the Financial Adjustment Indicator variables could explain the overnight call rate and also the term rates. We found that the fluctuations in the term rates could not be adequately explained from the movements in the reserves alone, we had to include all current account deposit at the Bank of Japan. Funds that were not included in the reserves can also influence the term rates, and should be considered "real accumulation of the reserves".

The Bank of Japan will be making changes to the figures released in the Supply and Demand of Funds in Money Markets and in the Bank of Japan Operation in the Money Market from the beginning of the reserve maintenance period in March (from March 16th). The Bank of Japan has brought to the forefront the notion that the surplus and shortage of funds in money markets is reflected to changes in the amount outstanding of the current account deposit at the Bank of Japan. Such alteration is valuable in that the mechanism between financial adjustment and interest rates as we have explained above will now be clearly conveyed to the market watchers. In addition, there is something inappropriate about the current definition of monetary base, whereby money market brokers can cash their current accounts at the Bank of Japan and the "monetary base" increases. To take this one step further, the definition of monetary base should also include the amount outstanding of the current accounts at the Bank of Japan held by those institutions not subject to the reserve requirements.

Under the "zero interest rate policy", the nominal short-term interest rates have fallen close to zero, and even the long-term interest rates - the yield on a ten-year national government bond, for example - is less than 2%. Despite this, the current monetary easing is inadequate because the real interest rates have not declined sufficiently. Figure 3 shows Japan's real interest rate, calculated under the assumption that the ex post inflation rate is equal to the expected inflation rate. We used rates forecast by the Japan Center for Economic Research for the inflation rate after the fourth quarter in 1999.

The real interest rates have fallen after the "zero interest rate policy" from February of 1999, but are still high compared to recent levels. In January of this year, the real short-term rates were 1.25%, and the real long-term rates were 2.13%, which are quite high compared to their respective bottom levels - 0.64% and, 0.65% for the real short-term and long-term rates respectively in the first quarter of 1997. This is due to the fact that forecast inflation rates are negative figures.

Japan does not have their own version of the UK's "Inflation-link gilt" and so we cannot directly observe the expected inflation rates. Thus, let us estimate Japan's expected inflation rate from a simple international comparison. Real long-term interest rates in industrialized countries have been converging, and in the 1990s, it was at about the 3 to 4% levels. Applying this to Japan, since our nominal long-term interest rates are lower than 2%, the expected inflation rate must be about -1.5%. If this is indeed the case, then we are not in a position to hope for an autonomous recovery in private demand. It would be difficult to lower nominal interest rates any further from a policy perspective, and so in order to lower real interest rates, the expected inflation rates will have to be raised.

The first policy approach that comes to mind is to continue with the zero interest rate policy, and wait for some kind of shock to the economy that will raise the expected interest rate. The problem with this is that we are left wide open for something like a sharp decline in the US stock market that will actually lower the expected inflation rate. Furthermore, if the recession continues, it will be necessary to continue to implement fiscal stimulus packages through an active government. Then the risk of the government going bankrupt increases, and fears of higher nominal long-term interest

rates will surface. This is the situation of a so-called "bad" rise in interest rates, one that is likely to actually prolong the recession.

The second approach is for the Bank of Japan to set their goal for a 1-2% inflation rate for the medium-term and to supply monetary base at a relatively high rate (the quantitative easing money). In this situation, the Bank of Japan must increase their buying operations not in the short-term money markets where the rates are already zero, but in the medium to long-term bond markets, where there is some room for rates to fall.

This kind of policy is one that works directly on the expectations of the people, and therefore the results are by no means guaranteed. However, this deflationary economy that Japan is experiencing now is one that has not occurred in the past half century in any of the industrialized countries, and we have no alternative but to start taking some more experimental policy measures. If we have success with the combination of the quantitative easing of money, and a target inflation rate, then the nominal long-term rates should reach at least 3%. This would be a "good" rise in interest rates, one that is accompanied by an increase in the expected inflation rate, and where monetary policy alone can sustain an economic recovery. Then the conditions for rebuilding public finance will also be met.