Past Crisis Experience for Asia

------ Banking Behavior and the Asset Bubble -----

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The purpose of this paper is to examine the financial turmoil of the recent European crisis, US-subprime loan crisis and Japanese asset bubble. There are common factors and individual un ique factors. In order to maintain a stable financial system after the burst of a bubble, it is important to have such measures as a rescue plan and a deposit insurance system in each country.

The paper will report that the causes of the Japanese and US bubbles can be seen in the expansionary monetary policy and aggressive credit expansion in the housing or real estate market. The housing market and real estate market take time to adjust to demand, but housing and real estate prices rise very quickl y when demand increases. Many banks expand their loans to the housing and real estate secto r when they see that it is profitable based on short term expectation s. Real estate in Japan is used as collateral for bank loans . Banks were sure to keep their collateral values when the land price was expected to rise even when bank loans were in default. The Japanese bubble was contained within Japan. On the other hand, the US sub-prime loan crisis spread all over the world, since housing loans in the US had been securitized and sold outside the country. Credit rating agencies gave securitized products o f mortgage loans high rating s, since they were believed to keep rising in value. Many investors trusted the good rating of securitized products and suffered after the collapse of the US housing market. Securitization made banks less responsible for

the quality of the housing loans they originated, because they were sold to other investors.

Many financial institutions in the US increased their supply of loans to the real estate and housing sector. Many of the loans were securitized without being kept as assets of the banking sector. Banks and mortgage companies became less cautious about their housing loans.

Excess supply was created in the housing and real estate market. This excessive supply of credit led to an excess supply of sub-prime loans created in response to an over supply of housing. The excess supply in the housing market led to a rapid decline of housing prices just as Japan experienced in 1989.

Three indicators to help prevent a bubble are proposed in this paper. Regulators have to watch macro economic movements, as well as the microeconomic behavior of individual financial institutions. Excessive expansion of real estate and housing loans are one sign. Another is housing prices in comparison to incomes. A theoretical model is explained later in this paper.

Sovereign risks are another issue in Europe. The sudden downgrading of sovereign bonds and the default of Greece had an enormous impact on bank assets in the various countries that owned the sovereign bonds. Government bonds are usually regarded as the safest assets in each country and as having zero risk.

The paper is organized as follows. The monetary policies and bank loan behaviors of Japan (1985-1995), USA (1990-2008) and Europe (2000-2011) are compared. When the economy faces sluggish conditions, the central bank tends to ease its monetary policy until the economy shows a strong recovery. However, easy monetary policy that lasts too long will create too much liquidity in the market and too much expansion of bank loans to real estate and housing. The monetary policy of the post-bubble period is also important. A too-quick contraction of Japanese monetary policy has pushed the economy down much further and the fixed Basel capital requirement of fixed number (8%) in those days caused a slow credit recovery in Japan.

Cournot-type oligopolistic behavior existed in Japanese banks (Revankar and Yoshino (2008)), which contributed to aggressive bank lending in the real estate market.

Compensation and stock options created a much greater loan expansion in the case of U.S.A. One solution may be an ex-post penalty for failed banks and failed shadow banks. However, in the midst of a bubble, it is quite difficult to force an end to aggressive banking behavior. Regulators also monitor whether collateral value and the rising trend of housing prices continue. It is not easy for the regulators, regardless of the economy is in a bubble or not.

However, the banking sector plays an important role in the payment system of a country. Therefore, the deposit insurance applies to banks through FDIC (Federal Deposit Insurance Corporation). Banks should be strictly monitored and regulated.

To what extent should shadow banking be regulated? The inter connectedness of financial activities between banks and shad ow banks is rising in many advanced nations. Therefore, regulations of shadow banks are also discussed after the sub-prime loan crisis. Traditional banking activities and non-secured financial activities should be clearly separated. The latter activities include mutual funds and money market mutual funds.

If monetary policy had been properly conducted, the excessive expansion of the shadow banking system could have been prevented. The expansionary monetary policy created too much leverage to shadow banks. The correct policy must be implemented when banks or shadow banks are faced with difficulties.

Various proposals, such as partial reserves of securitized products by originators, would have prevented the excessive expansion of securitization of originating banks. However, it would only have been effective to a certain extent.

The interaction between the macroeconomic policies and banking behavior is the key to be analyzed. This paper also stresses the importance of post-bubble monetary and fiscal policy. New financial activities in bank

dominated economies, such as those in Asia, will be proposed in below.

1, Excess money supply and too much liquidity

The first section reviews the monetary policy. Figure 1 shows the growth rate of the money supply of the US. From 1994 to 2008, the growth rate of the money supply increased between 4% and 10%.

Figure 1. Growth Rate of Money Supply in US A

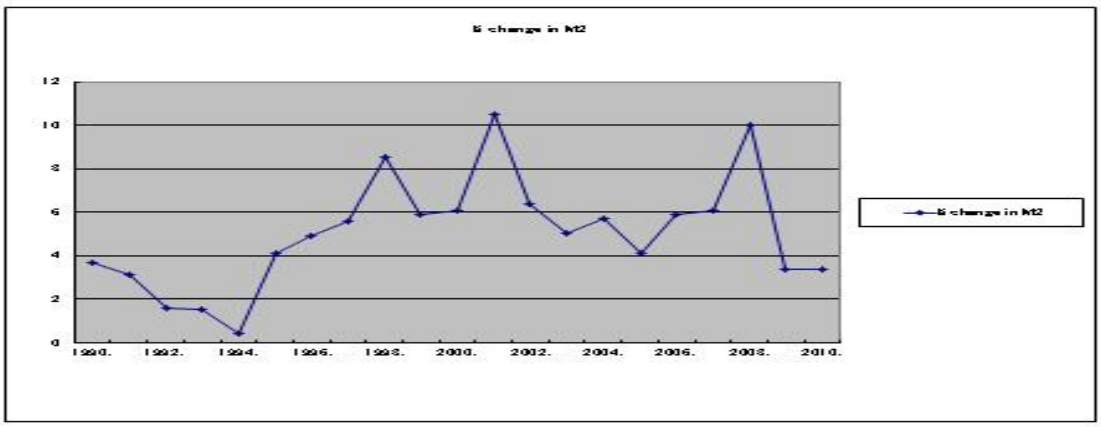
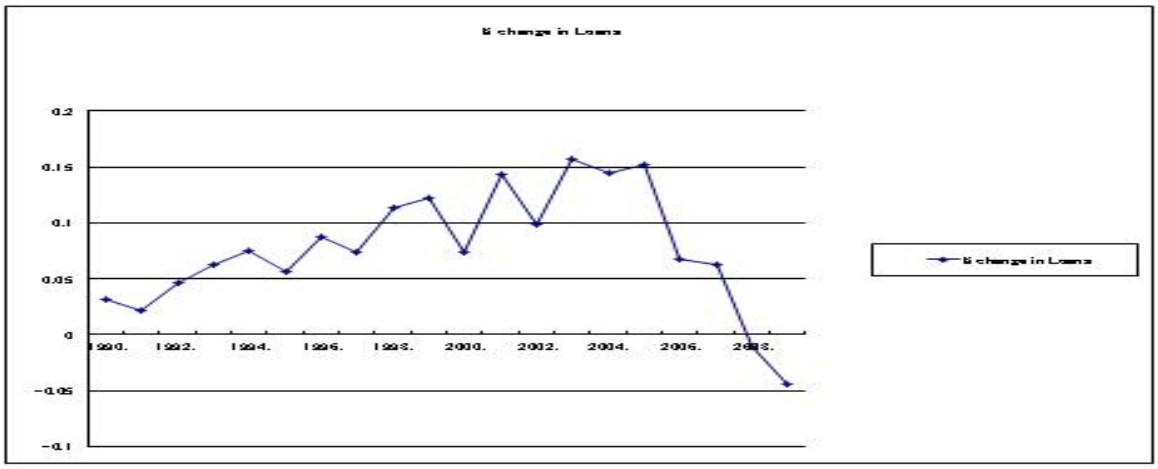


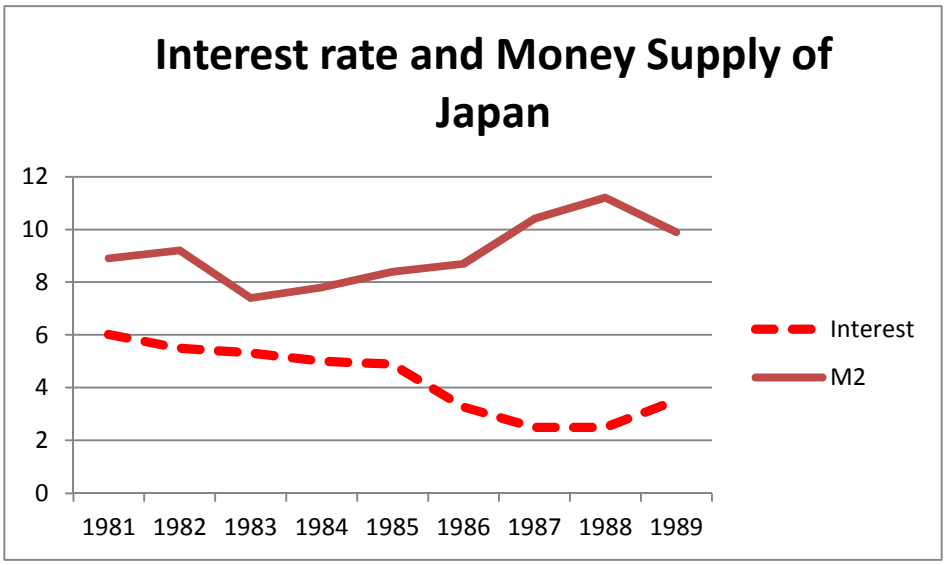
Figure 2 shows an expansion of US bank loans , especially to the housing sector. It shows the growth rate of bank loans . It can be seen that the expansion of bank loans was eminent just before the burst of the sub-prime loan bubble in the US.

Figure 2. Growth rate of bank loans (USA)



Japan's bubble period was the late 1980s. Increase in the growth rate of the money supply and a lower short-term interest rate (call lending rate) can be observed in Figure 3.

Figure 3. Japan's growth rate of money supply and lowering interest rate



However, there is a notable differences between the Japanese b ubble of the late 1980s and the US sub-prime loan crisis. The Japanese case was a domestic problem, since Japanese banks had to face defaults of real estate loans. It took many years for Japanese banks to recover from the NPL

(nonperforming loan) problem. US sub-prime loans were securitized and sold to the capital market. Not only US investors but also many overseas investors purchased securitized sub-prime loan products. Financial innovation made securitization possible, which spread the crisis to many overseas investors. These sub-prime loan products were given a credit rating of AAA. The original properties were not even checked by investors. Investors trusted the credit rating without paying too much attention to the original property values based in whi ch the securitized products were formulated.

2. Causes of the Bubble and Bubble Indicators

2-1.

The following figures compare the bank credits, share prices and land prices of Japan and USA. In both countries, a huge expansion of bank loans, especially to the real estate and housing sector, is observed in their bubble period. Real estate market is very slow to adjust to demand. In Japan, it takes 3 to 5 years to complete the building of commercial property. The housing market in U.S.A. also showed sluggish adjustment to its equilibrium. In Japan, the commercial properties and housing market showed very high demand during the economic bubble period in the late 1980s. In USA, the sub-prime housing market experienced a shortage of housing constructions. Real estate and housing markets had shown excess demand. The prices of real estate and housing started to rise and housing starts increased. Banks use land as collateral and since the collateral values were rising, banks tended to lend money to the property and housing markets, which accelerated housing starts. However, the housing market collapsed. The supply of commercial buildings and housing continued due to the sluggish adjustment of the property market even after the demand for housing declined. Excess construction of real estate and housing made prices start to fall. Bank loans became default when rising collateral values were anticipated. Non-performing loans increased in the banking sector.

Figure 4.

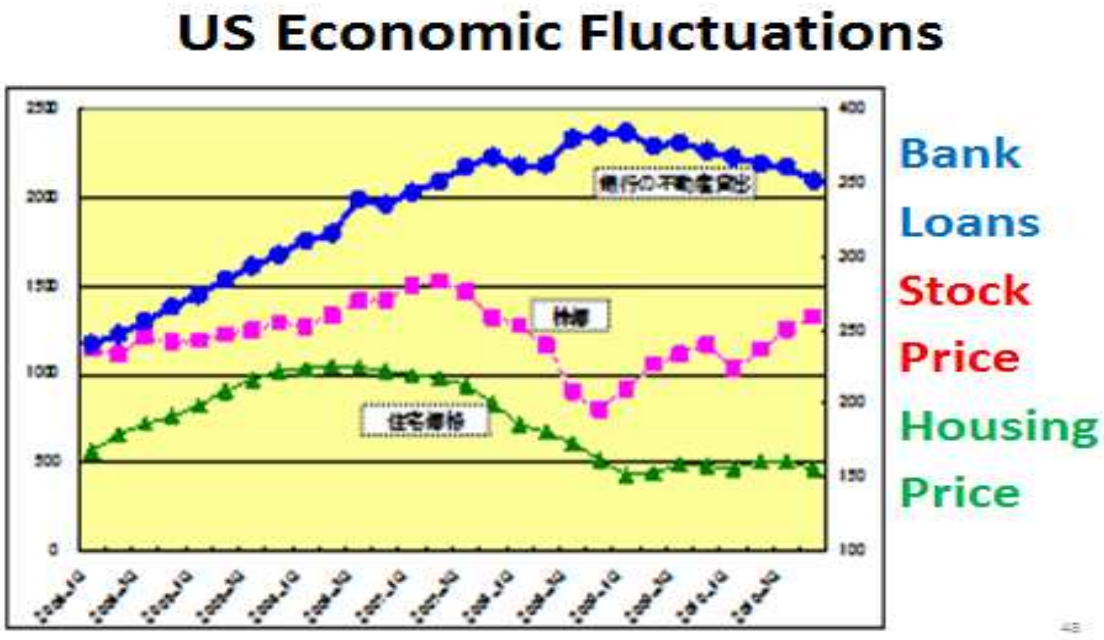


Figure 5. Japan’s bank loans, stock price and land price

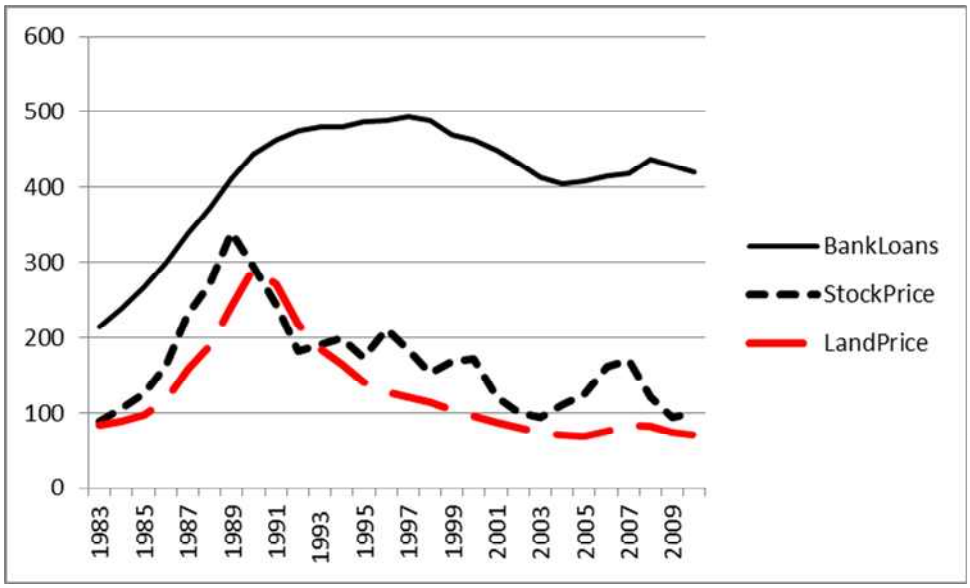


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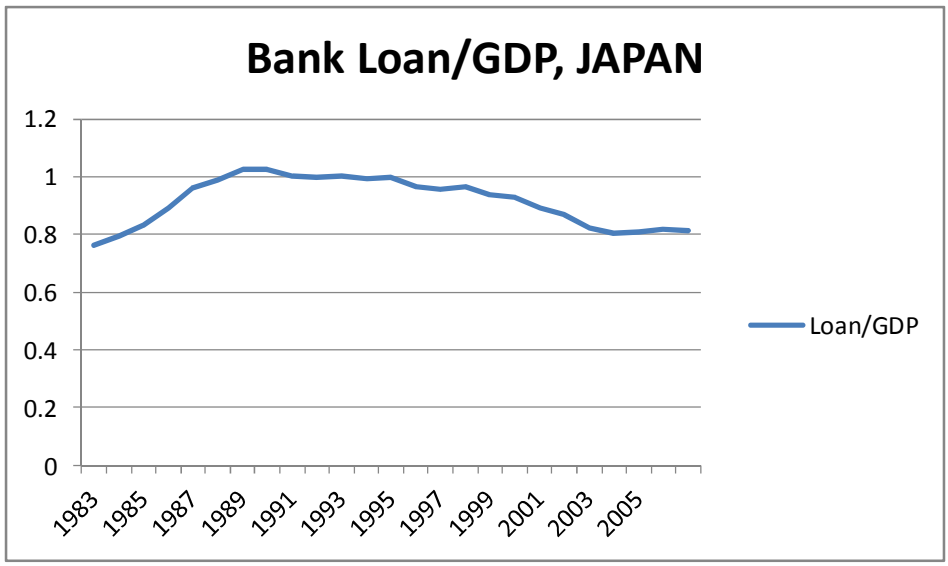
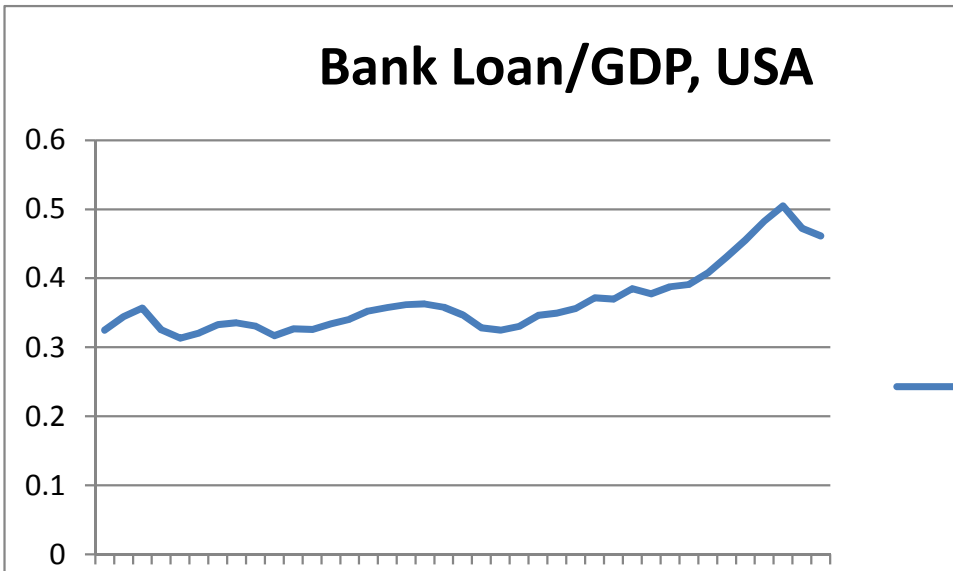
Figure 7.





2-2. Three indicators of a bubble

I would like to propose three indicators of a bubble based on the Japanese experience.

Ratio of real estate loans to total loans

In a steady state, the ratio of real estate loans to total loans must be constant, as is shown in the following equation.

$Y=F(K, N, K_L)=K^{\alpha} N^{\beta} K_L^{\gamma}$

$\partial Y/\partial K=\alpha Y/K$

$\partial Y/(\partial K_L)=\gamma Y/K_L$

$\alpha Y/K=\gamma Y/K_L$

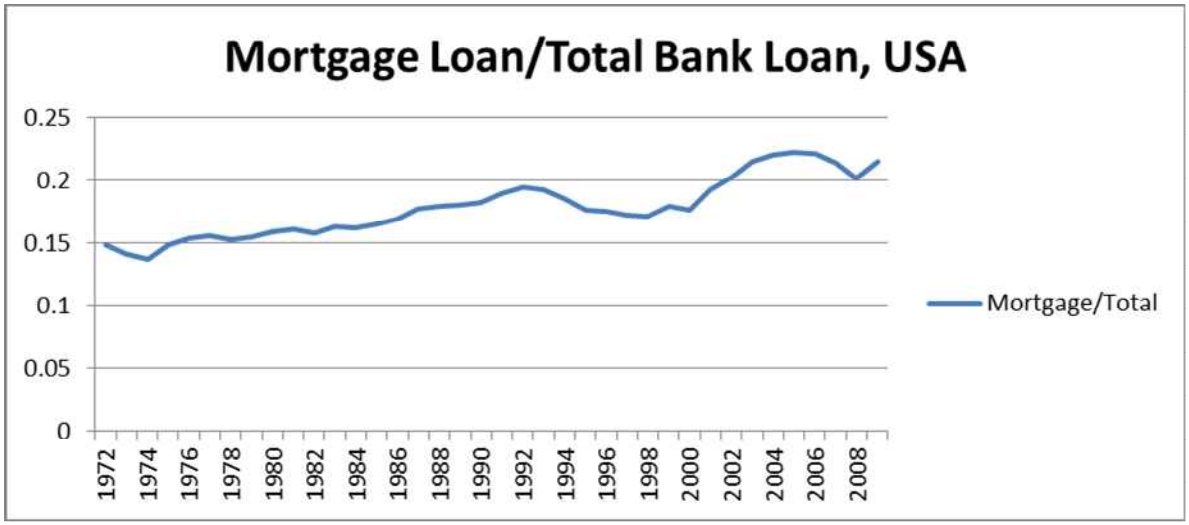
$K_L/(K+K_L)=\gamma/(\alpha+\gamma)$

Of course, the economy is moving from a manufacturing-oriented economy toward a services-oriented economy, where commercial buildings are much more intensively used, so the value of γ will rise. The total amount of real estate loans will be increasing, as the following equation indicates.

$K_L/(K+K_L)=\gamma/(\alpha+\gamma)$

The following figure shows the US mortgage loan to total loan ratio. It was increasing up to 2008, when the subprime mortgage bubble collapsed.

Figure 8.



Japan's bank loans to real estate, nonbank and construction companies increased from 16.74% in 1981 to 32.57% in 1989 in the midst of the bubble.

Table 1. Growth rate of real estate loans in compariso n to total loans

Share of Loans to Real Estate, Nonbank Financial Institutions, and Construction Companies by All Bank (%; in December of each year)

	1981	*1982*	*1983*	*1984*	*1985*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*
1. Real estate	6.54	6.76	7.13	7.52	8.39	10.39	11.13	11.69	12.19	11.86	12.02	12.42	12.44
2. Nonbank	5.08	6.48	8.18	9.86	11.14	12.79	14.42	15.38	15.17	15.21	14.54	14.17	14.13
3. Construction	5.12	5.08	5.24	5.35	5.43	5.30	5.04	4.96	5.21	5.10	5.34	5.57	5.95
Total for 3 sectors	16.74	18.32	20.55	22.73	24.96	28.48	30.59	32.03	32.57	32.17	31.90	32.16	32.52
Total outstanding bank loans (trillion yen)*	167.0	183.5	201.2	223.0	245.5	268.0	293.5	314.3	384.6	408.8	421.1	421.6	425.4

In a steady state, as shown in the production function, the growth rate of bank loans to real estate and the growth rate of total bank loans have to move at the same pace. When the economy moves from a manufacturing-based economy toward a services-oriented economy, where commercial properties have more weight for their production, the loans to real estate will increase at a faster speed than total bank loans. In the steady state equilibrium, total bank loans and real estate loans increas e in the same manner.

$Y=F(K,N,K_L)=K^{\alpha}\ N^{\beta}\ K_L^{\gamma}$

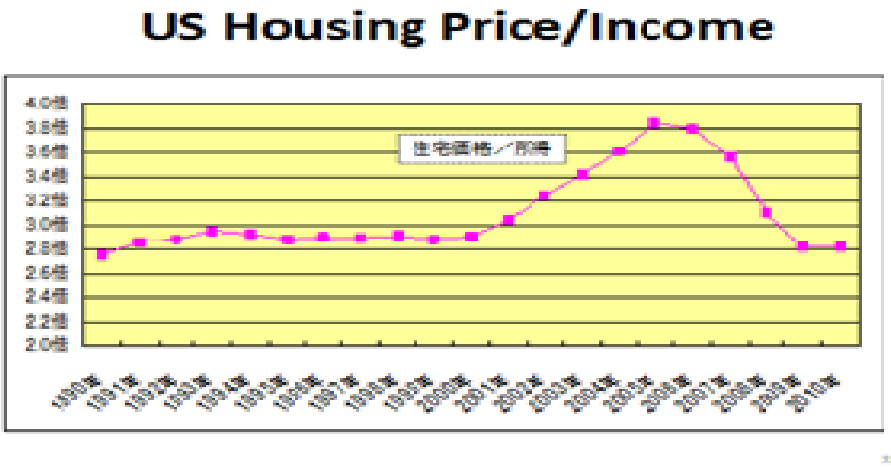
$\Delta Y/Y=\alpha(\Delta K/K)+\beta(\Delta N/N)+\gamma\ (\Delta K_L/K_L)$

2-3 Affordability of Housing

The following two figures show the housing price to income ratio. The US housing price to income ratio started to rise from 2001 , reaching a peak in 2006. A similar figure for Japan c an be seen in 1988, where stock price s and land price s peaked out. After the burst of the bubble, households in both countries could not afford to buy houses. The housing bubble terminated.

Therefore, the third indicator of the housing/real estate bubble is the housing price to income ratio.

Figure 9.



2-4, A simple two period model

$$\begin{cases} \text{Max } U(C_1, C_2, H) = \sum_{i=1}^{2} \beta^i u(C_i, H) \\ \qquad = \log C_1 + \log H + \beta(\log C_2 + \log H) \sim (1) \\ \text{s.t.} \quad C_1 + P_H(1) \times H = Y_1 + L \qquad (2) \\ \qquad C_2 + (1+r)L = Y_2 + P_H^e(2) \times H \qquad (3) \\ \qquad Y_2 = (1+g)Y_1 \qquad (4) \\ \qquad P_H^e(2) = (1+\theta) P_H(1) \qquad (5) \end{cases}$$

$$\left.\begin{aligned} \frac{\partial U}{\partial C_1} &= \frac{1}{C_1} - \lambda(1+r) = 0 \\ \frac{\partial U}{\partial H} &= \frac{1}{H} + \beta\frac{1}{H} - \lambda\left[(1+r)P_H(1) - P_H^e(2)\right] = 0 \\ \frac{\partial U}{\partial C_2} &= \frac{1}{C_2} - \lambda = 0 \end{aligned}\right\} (7)$$

$$(9) \quad H = \frac{(1+r)Y_1 + Y_2}{\left(\frac{2}{1+\beta}+1\right)\left\{(1+r)P_H(1) - P_H^e(2)\right\}} = \frac{(1+r)Y_1 + Y_2}{\left(\frac{2}{1+\beta}+1\right)\left\{(1+r)-(1+\theta)\right\}P_H(1)}$$

$$(8) \quad \frac{P_H(1) \times H}{Y_1} = \frac{(1+r)+(1+g)}{\left(\frac{2}{1+\beta}+1\right)(r-\theta)}$$

Households maximize their utility, which consists of consumption (c) and the purchase of housing in period 1. H denotes the purchase of housing in period.

Y_1 is income and L is mortgage loan from banks in period 1.

Households pay interest for their housing loans (rxL) and return their principals (L). Households are expecting Θ fraction of capital gains of their own housing ($P_H^e(2)$-$P_H(1)$= Θ $P_H(1)$) to be realized in period 2.

As the expected housing prices rise, households can afford to buy larger houses which is shown in Equation (8). However the expected price hikes of their housing cannot be realized, and the mortgage loan cannot be returned to the bank. Instead, households go bankrupt. The housing price to income ratio, which is shown in Equation (8) is constant, when α ,c, r are given and the expected increase of housing prices is zero.

The US housing price/income ratio depicts a stable manner when a housing bubble is not occurring. However, it goes up sharply as expectations of housing prices go up. Historical data reveals that equation (8) holds.

3, Why does a bubble occur in many countries ?

Both in US and Japan, easy monetary policy and excess liquidity were

observed at the beginning of the bubble.
In Japan's case of the late 1980s, its exports grew so rapidly and it was pressured from overseas to increase imports from abroad. In order to increase imports, the Japanese domestic economy had to grow. Higher growth requires much more imports, and consumers will start to purchase foreign goods and services. Therefore, the easy monetary policy was introduced in 1987 by setting the call lending rate at its lowest level since WWII, as shown in Figure 3. Money supply was grown and the amount of deposits increased in the banking sector. Japanese land price s kept on increasing after WWII as shown in Figure 5. Nobody believed that property prices in Japan would fall. Banks continued to lend loans to real estate companies and construction companies.

After the burst of the IT bubble, the US economy was faced with a sluggish economy. Greenspan introduced an easy monetary policy and the growth rate of the money supply went up to a higher level, as shown in Figure 5. Excess liquidity was created by easy monetary policy. Stock prices start ed to recover and kept on rising. People sta rted to spend much more money due to an increase of stock prices (namely, the wealth effect). Consumption started to rise, which led to higher demand for output. Higher sales of outputs made companies invest more to cope with high levels of demand. Aggregate demand was increasing and Chairman Greenspan was appraised very much for his offsetting of economic downturn after the IT bubbles burst. However, the excess liquidity brought not only hikes of stock prices but also increases of housing prices. An increa se of the collateral value of housing led banks to lend money to the lower income group for their purchase of housing. Since housing prices were rising, the securitized products of sub-prime loans were rated "AAA" by credit rating agencies. Investors from various countries purchased these securitized products.
For a central bank, it is difficult to stop excess liquidity in a forward looking manner since everybody enjoys a booming housing market and bull market. If a central bank starts raising the interest rate in order to stop the bubble, the economy starts to shrink, which nobody likes. When people are in a boom, they keep asking the central bank to continue its policy. If Greenspan had introduced a tight monetary policy, he would have been

blamed for stopping the economic boom of the US.
In this regard, a bubble will occur even in future. Central banks must maintain economic booms as long as possible, which will eventually create a bubble while people are enjoying their prosperity.

4. Empirical analysis of banking behavior of Japan, USA and Europe

4-1. Empirical Analysis of Banking Behavior of Japan during bubble period (1982-1995)

There are two sets of empirical results of Japanese banking behavior. First, (a) we document evidence against profit -maximization and in favor of the fact that Japanese banks, in fact, tended to supply loans beyond profit-maximization levels, thus accentuating the excess loan problem. Second, (b) Japanese banks certainly recognized, during the bubble period, the existence of interdependence (externalities) among themselves with reference to loan supply decisions. We explore how the Cournot -type conjectural variation we consider, which engenders interdependence, has induced banks to indulge in aggressive loan expansion.
Third, (c) we examine the bearing of the call lending rate on financial instability. Fourth, (d) following the lead of several previous works, we investigate whether the capital requirement of the Bas el Accord helped curtail loan levels.

The present study analyzes using panel data with N=14 banks in Japan, for T =14 years from 1982 to 1995; we can also use data on the banks' loan shares in the initial period of 1981. We focus attention on city banks and the long-term credit banks; in particular, we absta in from the trust banks as these are behaviorally different. Banks included here are ,
(i) Daiichi Kangyo Bank, (ii) Sakura Bank, (iii) Fuji Bank, (iv) Mitsubishi Bank, (v) Asahi Bank, (vi) Sanwa Bank, (vii) Sumitomo Bank, (viii) Daiwa Bank, (ix) Tokai Bank, (x) Hokkaido Takushoku Bank, (xi) Bank of Tokyo, (xii) Industrial Bank of Japan, (xiii) Long term Credit Bank, (xiv) Nippon Credit Bank.

Table 1. Estimated loan supply function (SS equation)*

Dependent Variable q_{it} (bankloan)	Period I (1982–1989)		Period II (1990–1995)
DEP_{it} (Bank deposit)		0.658	
		(19.69)	
MS_i (Market Share)		0.426	
		(1.48)	
$r_t - CR_t$ (Loan Rate –Call Rate)	16.298		21.351
	(2.611)		(3.028)
CR_t (Call Rate)	8.564		6.755
	(2.568)		(2.904)
BIS_{it} (BIS-ratio)		8.658	
		(2.353)	
$Q^*_{it} = Q_{i(t-1)}$	0.066		0.038
(Rival Bank's Previous Period Loan)	(3.675)		(2.333)
LP_t (Land Price)	0.123		−1.760
	(2.546)		(−1.449)
Constant		−36.302	
		(−0.874)	
Adjusted-R^2 0.892, Hausman Statistic, CHI-SQUARE=0.923, P-Value=0.820			

* Figures in parentheses are t-values.

Table 1 presents estimates of the supply function which are denoted in Equations (1) and (2). In discussing these results, we focus attention primarily on the issues of: (a) interdependence among banks, (b) the effectiveness of the call lending rate (CR) as a monetary policy instrument, (c) the role of the land price (LP) both from the demand side and the supply side, (d) whether the banks pursued the goal of profit -maximization and (e) the effectiveness of the BIS capital requirement ratio.

We begin by first noting that the coefficient estimates are for the most part significant, and have expected signs. There is also evidence that the loan supply function underwent a structural change from Period I (1982-1989) to Period II (1990-1995). Indeed, the coefficients of Q^*_{it} and (rt -CRt) have been different between the two periods , we have in fact separately verified that t he t-values for testing a4 - b4 = 0 (relating to Q*it) and a6 - b6 = 0 (relat ed to (rt - CRt)) are respectively -4.298 and 4.451, which are significant even at the 1% level of significance. Further, the t-value for testing a5 - b5 = 0 (relat ed to CRt) is -1.706,

which is significant at the 10% level of significance. It seems safe to conclude that the LP variable too has different coefficients in the two periods in as much as the estimate of a7 is significantly different from zero, while that of b7 is not ; we have not computed the relevant t -value.

(a) Interdependence

The possible existence of interdependence/externalites in our model is signaled by the presence of the Q* it variable, which is what the ith bank thinks the rivals will supply in period t , Following a version of the so-called Cournot oligopoly model discus sed extensively in the literature, we have set Q*it= Qi(t-1) = rivals' previous period of supplying loans. Table 1 above shows that individual bank behavior is subject to interdependence, in as much as the coefficients of this variable are significant in b oth periods, the respective t -values, being 3.675 and 2.333. Some additional features of these coefficients are also worth noting. First, the coefficients in both periods are positive. This indicates that a bank' s current period of loan expansion was fuele d by the previous period expansion by its rivals, thus making for a spirited expansion of total supply. Second, the coefficient in Period I is larger than in Period II, being 0.066 and 0.038, respectively. This supports the accepted view that the expansion in Period I proceeded at a higher rate than in Period II. Third, the significant Period -II coefficient indicates that the aggregate loan did proceed to expand even after the burst of the bubble in 1990. Figure 1A (in Appendix A) confirms this expansion ph enomenon over Period II at the aggregate level, though expansion is more gradual over the period. In all this, one gets the impression that the banks were more concerned with loan expansion, and not necessarily with profit -maximization. Indeed, it will be seen soon below that evidence supports the view that the banks in fact abandoned the maximum profits goal.

(b) Influence of the call lending rate

In Period I, the coefficient of (r − CR) is 16.298 and that of CR is 8.564, so the net coefficient on CR is −7 .736. Likewise we find the net coefficient of CR in Period II to be −14.595. Both of these net coefficients are also significantly different from zero, the corresponding t -values being −2.654 and −3.087, respectively.

It is evident therefore that the CR wa s available as an effective policy

instrument over the two periods. The monetary authority indeed exploited this fact to control the loan supply. However, in order to encourage domestic demand, it is known that the monetary authority lowered the CR too much in Period I, which inevitably prompted the rapid growth of the loan supply over this period. On the other hand, the authority raised the CR considerably in the first part of Period II, which again explains why the loan supply dried up beyond some point during this period.

(c) Influence of the land price (LP)

Consider first Period I, and also consult Table 2 which presents 2SLS estimates of DD coefficients. The coefficient of LP in the DD is positive and significant, at −0.056 (t=3.854), and the coefficient of LP in the bank loan supply equation is also positive and significant, − 0.124 (t= 2.546). It is conspicuously evident, therefore, that this period experienced a rapid growth in total loans in the face of rising LP levels, and the downward shifts in the loan supply (in the (r, q) plane).

The coefficient in the SS in Table 1 is now negative but is insignificant, at −1.76 (t=−1.449), which shows that the SS shifted up [in the (r, q) plane], but not by much, i.e., banks were not particularly active participants in reigning in loans. The net result has been that total loans continued to rise until 1993, though at a slower pace, even though LP started dropping in 1990.

(d) Profit maximization?

The issue of whether the banks in Japan pursued the goal of maximum profits over the two sub-periods in question has been debated frequently in some quarters, but has not been previously subjected to rigorous scrutiny through a quantitative analysis. We gather here some convincing evidence on the issue: Table ? shows, in fact, that the banks did not pursue the maximum profit goal over either of the two subperiods. It is readily seen from the table that the coefficient of the CR variable, θ/g, is estimated as 8.564 in Period I and 6.755 in Period II, the respective t-values being 2.568 and 2.904. The estimates are significantly different from zero even at the 1% level of significance. The evidence therefore is overwhelmingly against the hypothesis of profit maximization ($\theta = 0$) in both periods. Furthermore, the coefficient on (r − CR) is $(1+\theta)/g$, and is estimated at 16.298 and 21.351 in Period I and Period II, respectively. Consequently,

the respective θ-values are 1.1072 and 0.4628 -- both positive and significantly different from zero. Two implications of this: First, it follows from the general rule of MC = MR(1+θ) that the banks operated throughout the sample period at points where M C exceeded MR, i.e., where the loan amounts supplied were well beyond the profit -maximizing levels. It is also apparent from the θ -values that the loan amounts in Period I outstripped profit-maximizing levels by a much larger margin on average than in Period II. This is entirely consistent with what we observed while assessing the impact of LP immediately above. Figure 1 depicts the situation for a typical bank where

q* = profit-maximizing loan amount,

qaI=Actual loan supply in Period I

qaII= Actual loan supply in Period II

Figure 2. Typical profit-maximizing and actual loan amounts.

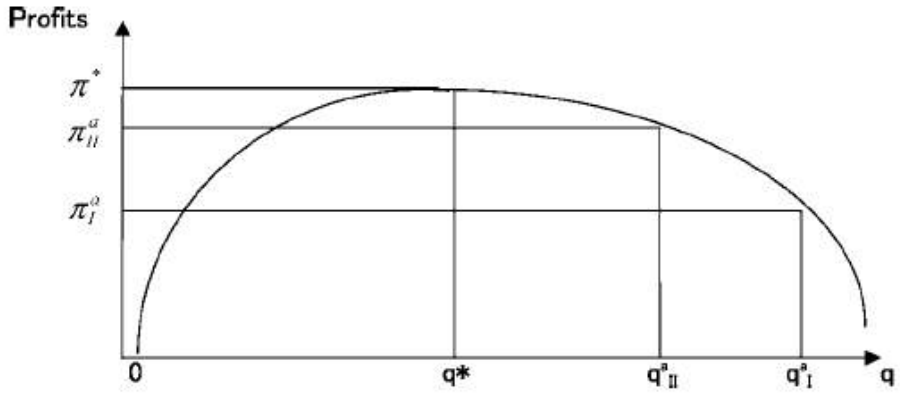


Figure 2. Actual profits (π^a_I, π^a_{II}) and maximum profits (π^*).

(e) BIS capital requirement

BIS (Bank for International Settlement) imposed a capital requirement of 8% for all banks which operate international lending business. We hav e used the BIS capital ratios publicly available for the banks in our study for the years 1990 to 1995; in every instance, the ratio has been above the required minimum of 8%. For prior years in the sample, we have set BIS=0 in the belief that the regulati on did not have a measurable impact over that time span. One objective of the BIS regulation is to make sure that

when banks are faced with a non-performing loan problem they hold sufficient capital to cope with the problem.

Table 1 shows that the BIS capi tal ratio has a positive and significant coefficient in the loan supply equation. This indicates that the regulation was effective, since bank loans tended to contract for smaller values of the BIS; or alternatively, that the banks felt comfortable enough to expand loans only when the actual BIS capital ratio was larger (above the 8% mark) and hence when banks had sufficient amount s of secure capital.

4-2. US and European banks; empirical analysis (preliminary)

Table 4 shows an empirical analysis of US b anks and European banks. The US case shows the significant impact of housing price s on US bank loans. On the other hand, the European case shows significant effect of an interest rate gap between the lending rate and the short term interest rate.

Table 4, US and European banks' loan behavior

US Bank Loans	Housing price	Interest rate gap	Deposits	Constant
Coefficient	20115.88231	4206011.129	0.39884895	-11815755
t-value	3.57	1.79	2.87	-1.7
R-squared	0.955			
EU Bank Loans	Housing price	Deposits	Interest Gap	Constant
Coeff	-24052.0724	0.819331691	19414563.3	-149768.33
t-value	-2.63	10.44	2.32	-0.53
R-squared	0.997			

5, Deposit insurance to prevent bank runs and avoid systemic risk

Deposit insurance and ex-post policy are important as crisi s prevention measures. Japan introduced blanket guarantee for deposit accounts (transaction purpose with no interest payments) . Large companies transact huge amounts of money, much greater amount than households' deposit guarantee, on daily basis. USA introduced the same kind of deposit in 2009,

right after the sub-prime loan crisis. It prevents bank runs even when the banks are facing difficulty.

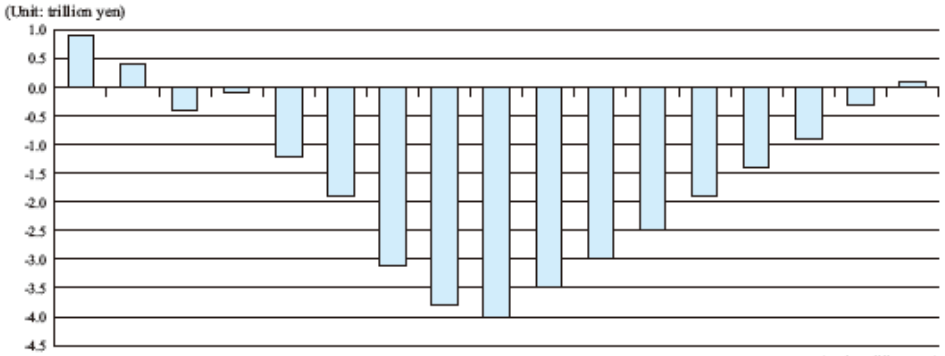
There are two indicators; how much reserve funds are kept at the Deposit Insurance Corporation, and what the deposit insurance premium would be ?

In Japan, the target reserve funds are set at the level of the insured deposits of two medium-large banks. In the past 25 years, the large accumulated loss had been approximately of the level of the failure of two medium-large banks. If the extremely large bank gets into trouble, emergency measures will be taken and the government would inject capital into the bank while notifying how much capital had been injected. The transparency of capital injection will reduce the moral hazard problem as the problem bank would have to return the injected amount of money in the future when it becomes healthier.

Table 5, Size of deposits of major Japanese banks
(March 2011, trillion yen)

Post Bank		174.6
Mitsubishi-Tokyo-UFJ Bank		105.8
Mitsui-Sumitomo Bank		74.0
Mizuho group		77.6
Bank	56.2	
Corporate Bank	21.4	
Risona Bank		20.8
Yokohama Bank		10.7
Saitama-Risona Bank		10.1
Chiba Bank		9.1

Balance of liability reserves/retained loss



Balances of liability reserves/ retained loss	FY1994	FY1995	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010
	0.9	0.4	-0.4	-0.1	-1.2	-1.9	-3.1	-3.8	-4.0	-3.5	-3.0	-2.5	-1.9	-1.4	-0.9	-0.3	0.1

Financial assistance in the resolution of failed financial institutions (as of March 31, 2011)

(i) Financial assistance on a fiscal year basis

(Unit: billion yen)

Fiscal year	Number of cases	Monetary grants	Asset purchases	Lending	Debt assumption
1992	2	20.0	—	8.0	—
1993	2	45.9	—	—	—
1994	2	42.5	—	—	—
1995	3	600.8	—	—	—
1996	6	1,315.8	90.0	—	—
1997	7	152.4	239.1	—	4.0
1998	30	2,674.1	2,681.5	—	—
1999	20	4,637.4	1,304.4	—	—
2000	20	5,154.6	850.1	—	—
2001	37	1,639.4	406.4	—	—
2002	51	2,325.5	794.9	—	—
2003	0	—	—	—	—
2004	0	—	—	—	—
2005	0	—	—	—	—
2006	0	—	—	—	—
2007	0	—	—	—	—
2008	1	256.3	1.7	—	—
2009	0	—	—	—	—
2010	0	—	—	—	—
Total	181	18,864.8	6,368.0	8.0	4.0

(ii) Financial assistance by category of financial institution

(Unit: billion yen)

Category of financial institution	Number of cases	Monetary grant		Asset purchases		Lending		Debt assumption	
		Number	Amount	Number	Amount	Number	Amount	Number	Amount
Total	181	177	18,864.8	168	6,368.0	1	8	1	4
Under full protection	169	166	17,781.7	167	6,366.3	0	—	1	4
Banks	21	17	12,569.3	18	4,577.4	1	8	1	4
Under full protection	17	14	11,722.9	17	4,575.8	0	—	1	4
Shinkin Banks	27	27	972.7	25	550.0	0	—	0	—
Under full protection	25	25	926.7	25	550.0	0	—	0	—
Credit cooperatives	133	133	5,322.8	125	1,240.6	0	—	0	—
Under full protection	127	127	5,132.0	125	1,240.6	0	—	0	—

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