Asset Price Bubble and Banks:
The Case of Japan

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This paper analyses the behaviour of the Japanese banks at the outset of the asset price bubble in the late 1980s. The paper argues that with the advent of financial deregulations, the declining trend of profitability forced the banks to exhibit speculative behaviour during the asset price bubble period (mid-1980s) to increase short term profit. This has ultimately led to the banking crisis after the burst of the bubble in 1989. Our empirical results support this argument. The paper also attempts to provide a comprehensive description of a number of interrelated structural changes in the financial system of Japan during 1977-2003 that opens up the domain of possibility for rethinking the issues related to change in policies. The case of Japan in the context of the rise and burst of the asset price bubble and subsequent banking crisis could be instructive for many countries including Bangladesh that are facing the asset price bubble situation. Japanese experience suggests that monetary policy should respond to asset bubbles in a cautious and moderate manner in order to avoid economic distortions. The lessons that can be learned from the Japanese experience are: (i) central bank's role to burst bubbles must depend on the degree of efficiency of the financial sector, and (ii) the speed to burst the bubble must be based on the overall economic situation.

I. INTRODUCTION

The emergence and burst of the bubble economy in Japan in the late 1980s were mostly characterised by the commercial banks' aggressive behaviour, collapse of some banks and debtor companies with a huge burden of non-performing loans (NPL). About 180 banks were failed in the 1990s and subsequently a prolonged

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stagnant period for the Japanese economy started. Naturally, the question arises: were the banks responsible for creating the bubble that subsequently led to the banking crisis of the 1990s? This also raises curiosity as to why the most successful banking system of the 1960s and the 1970s has failed? Did the deregulatory measures indicate any structural changes in the financial system that contributed to the failure of the banks? The paper attempts to shed some insights into these questions.

Many authors have tried to analyse the situation from various aspects (see, Aoki and Patrick 1994, Okina *et al.* 2001, Hossain 2005, Aoki and Patrick 1994) expressed concern about the structural changes that occurred in the financial system of Japan. They argued that the asset-price bubble in the late 1980s was partially created by the erosion of the coherence and integrity of the regulatory framework. According to them, with diminishing opportunity for traditional lending and limited access to bond-related services during the protracted monetary easing of the mid 1980s, banks started to increase lending to real estate companies and non-banks. This also revealed the banks' weak monitoring capacity in the newly emerged market environment.

Okina *et al.* (2001) identified some other reasons for the emergence of the bubble in the late 1980s and the subsequent banking crisis. These are aggressive bank behaviour, protracted monetary easing, taxation and regulation on land, weak mechanism to impose discipline on economic agents, self confidence of economic agents, etc. In line with the views of Okina *et al.* (2001), Hossain (2005) argued that weaknesses in the corporate governance of banks were crucial for the banking crisis in the 1990s, rather than asset price bubble and financial deregulations.

In this paper we take the view that financial liberalisation was started in the early 1980s without making financial institutions prepared properly for the changing situation. As a result, financial institutions could not cope with the situation instantly and indulged in some speculative behaviour. Of course, such behaviour may be associated with corporate governance problem, as Hossain (2005) argued. Therefore, analysis of banks' profitability is important as this has led to a sharp response from banks to the structural changes that occurred in the Japanese banking system in the 1980s. Although the deregulatory measures were partial in nature, these measures created problems in functioning of the banks as they were not fully prepared for moving toward competitiveness. Thus the paper analyses the behaviour of the financial institutions by taking their profitability issue into consideration. We use aggregate data for the period 1977-2003 to analyse bank profitability. Since the data resembles time-series properties, ordinary least square regression is not appropriate. Therefore, we apply Vector Error Correction Model (VECM) to assess

the long run and short run relationship between bank profitability and other macroeconomic and monetary variables.

The paper is organised as follows. After introduction, Section II provides an overview of the Japanese financial system. Section III highlights various aspects of banks behaviour during the asset price bubble. Section IV describes methodology and data and Section V discusses empirical results on bank profitability. Section VI concludes the paper.

II. JAPANESE FINANCIAL SYSTEM: AN OVERVIEW

II.1 The Main-bank System

The Japanese financial system is predominantly bank-based. Post-war Japanese financial system was highly regulated and banks were heavily dependent on Bank of Japan's (BOJ) subsidies (window guidance) and borrowings of enterprise groups. The characteristics of Japanese model of financial system during post-war period included high debt/equity ratios, greater reliance on bank loans than securities markets, closer relationship between banks and borrowers, extensive corporate cross-shareholding, greater guidance from the government in credit allocation, etc. The system is well known as the "main bank" system. It is evident from many research works that this "main bank" system contributed greatly to the post-war economic growth of Japan although the varieties of functions played by the main bank were not associated with the usual concept of commercial banking. This type of Japanese banking system is characterised by clearly defined structural policy of the government for stimulating and maintaining specialisation among financial institutions. The changes were not made to achieve maximum competition in a free market (Wallich and Wallich 1976).

There is a vast literature on how the main bank system played a very important role in Japanese economy and financial system. The core of an enterprise group is usually a bank that is called *Main Bank*. Pre-war Zaibatsu and post-war Keiretsu are examples of such types of enterprise groups, with the big six being Mitsui, Mitsubishi, Sumitomo, Fuyo, Sanwa and Ikkan. Group affiliation interlocks stock shares among industrial enterprises, banks and other financial institutions. The arrangements between main bank and group involved both financial and non-financial aspects. The financial arrangements included the sharing of financial risk through mutual support, preferential loans from the financial institutions and the control of stock voting power through ownership within the group. The non-financial arrangements included joint sale and purchase arrangements, assured markets and sources of supply, technological affinity, combined research, and cooperative planning. This structure of Japanese banks might be relevant to the so-

called "Industrial bank" (also available in Germany as House bank) rather than modern commercial bank.

Unlike American and many other countries' banks, Japanese banks were allowed to own equity in other corporations. The shares of group member firms owned by banks form an important link in the interlocking structure of enterprise groups. In addition to interlocking shares, banks provide preferential loans and board members to the group affiliated firms. A group bank serves as a screening agent for the investment projects of the group firms and stands ready to lend funds whenever they are needed (Hoshi, Kashyap and Scharfstein 1991). Table I demonstrates that despite efforts to change the main banking system, each enterprise group consisted of at least 3 banks or insurance companies in 1987. This indicates that all the characteristics of the main banking system have not been completely eliminated during the liberalised period.

TABLE I
ECONOMIC SIZE OF THE BIG COMPANIES (FY1987)

	No. of member firms	Total Bank/In surance	Average interlocking Shares	Average intra-group loans	Total assets (billion Yen)	Loan share[1] (FY1989)	Board of directors share[2] (FY1989)
Mitsui	24	4	17.1	21.94	238,447	5.96	6.69
Mitsubishi	29	4	27.8	20.17	241,846	7.17	7.08
Sumitomo	20	4	24.22	24.53	153,202	6.75	6.58
Fuyo	29	4	15.61	18.20	322,798	6.03	9.38
Sanwa	44	3	16.47	18.51	377,622	7.30	8.97
Ikkan	47	5	12.49	11.18	466,250	4.44	12.44

Source: Ito (1992).
Note:[1]Outstanding loans lent by group financial companies/ Total outstanding loans.
[2]No. of directors sent from group companies/Total outside board members.

Literature review suggests that a policy shift toward a greater emphasis on competition was induced in the late 1960s. Amongst other measures, an effort has been made to make banks more profit-oriented by easing the dividend restrictions (Wallich and Wallich 1976). As a part of intensive and continuous effort to improve the competitive structure, the Certificates of Deposits (CDs) became available in May 1979; Gensaki[1] transactions with CDs (unregulated interest rate) became

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[1] The "Gensaki market" means repurchase agreement market established in 1949 by securities houses. It became important in 1970 when FIs and large companies began to participate.

increasingly popular, as there is no transaction tax on CDs. The Tegata[2] market, freed from interest rate regulation, also grew in the 1980s. During this period, restrictions on fund-raising in the securities market by firms were removed and major firms became less dependent on bank borrowing. These deregulations were aimed at strengthening capital market. The decade of 1980 might be termed as undirected deregulations as like a "boat without sail." Aoki and Patrick (1994) termed the banking system of that time as "market-embedded main bank system" since some elements of the main bank system remained valid. Such untargeted liberalisation policies created many problems for the economy and the financial sector while switching from regulated regime to a complex partially liberalised regime.

As a compensation for reduced dependency of enterprise groups by these regulatory frameworks, banks are allowed to expand their businesses in risk market (security and insurance), capital market (investment banking) as well as money market. In fact, this model follows *universal banking system* although economists have no consensus on the economies of scale of universal banking (Caprio 1994). One of the counter arguments is that commercial banking activities are less risky than the security operations, so risky security business may affect the commercial banking activities.

II.2 Financial Liberalisation

The structural changes in the Japanese financial system have been started from the mid–1970s (Sujuki 1987). The main features of these deregulations were interest rate deregulation, relaxation of regulation to raise funds in the securities and investment market by firms, initiation of freely floating exchange rate and allowing banks and firms to participate in the capital market, etc. to increase the ability of the Japanese banking system to meet international competition. These deregulations also targeted the dissolution of cross-shareholdings.[3] Many have attributed that financial liberalisation policies were also needed to finance government budget deficit through allowing banks to participate in the bond market. There was a sharp increase in government budget deficits in the late 1970s and to finance the deficit,

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[2] The Tegata (bill discount) market is a short-term financing market for two-weeks to six-weeks. It was spun off from the call market in 1971.
[3] The Anti Monopoly Law Reform, 1977 was one-step forward in reducing cross-shareholding. Okabe (2001) shows that cross-shareholding is gradually reducing in the Japanese financial system.

there was a need to sell large amounts of government bonds (see Cargill and Royama 1988).

The developments in regulatory frameworks after 1990 allowed banks to do business in both the capital and risk market. Under these regulatory frameworks, Japanese banks were given license to do conventional non-banking activities like lease financing, investment and merchant banking, underwriting, insurance business, etc. Thus, these types of regulatory frameworks allowed banks to expand their businesses in risk market (security and insurance), capital market (investment banking) as well as money market. This model follows universal banking-type system rather than modern commercial banking.

Some of the deregulatory measures are noteworthy. The interest rates for large-amount time deposits (LTDs) were deregulated in 1985, thus the share of these deposits in the money supply had skyrocketed. The lowering of the minimum deposit amount for money market certificates (MMCs) to 10 million yen in October 1987 made those certificates more popular among households. The Anti-Monopoly Law Reform of 1977 specified that all financial institutions must reduce their share holdings from 10 per cent to below 5 per cent by December 1987.[4] Although this law was aimed at dissolution of cross-shareholdings, there was no limit on the total number of different stocks a bank can hold. By this law, a bank's holding of different stocks can exceed its total capital, which might carry risk for the banking business. Since bank's money are the depositors short-term money, share holding in equity of its enterprise groups sometimes may create mismatch in maturity and loan portfolio.[5]

After the collapse of the bubble, the important structural changes started by the Financial System Reform Act, 1992 (enforced in April 1993) that has allowed banks to conduct trust businesses either through trust bank subsidiaries or by themselves and securities business through securities subsidiaries subject to the permission of the Prime Minister. Later, the Financial System Reform Law of 1998 was enacted which allows banks to conduct insurance businesses through subsidiaries from

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[4] By this reform the policy of 1951 again revived.

[5] It is widely argued that Ministry of Finance (MOF) has been very deliberate in asserting authority over banks, merging banks, and controlling the system. Moreover, Japanese socio-cultural activities have been rooted in the form of "group" activities or "joint" decision; Zaibatsu, Keiretsu, and the main bank system were a reflection of this "group" phenomenon. With the financial deregulations, is the authoritarian role of MOF shrinking or is the "group phenomenon" of Japanese culture getting eliminated? The interesting thing is that the structural changes in the financial system can be explained as the two sides—industrial banking and universal banking, of the same coin "convoy system."

October 2000. Since March 1998, banks are allowed to establish bank-holding companies that can own a securities subsidiary. Banks were allowed to sell investment trusts at their counter from December 1998. This policy shift was necessary as the bad loans consequences of the bursting bubble result in a weaker banking system that needs further deregulations, particularly permitting banks to engage in bond underwriting and related services more liberally.

Non-bank financial institutions (NBFIS), consumer-financing institutions, insurance companies, etc. are mostly working as a subsidiary company of the banks. They are heavily dependent on banks for their funding. However, the scope of business has opened up a wide range of business possibility for the banks that indicates a significant change in their structure compared to the structure before 1980.

III. ASSET PRICE BUBBLE (1987-89) AND BANKS' BEHAVIOUR

With the advent of liberalisation in the 1970s and 1980s, market forces unleashed on the hitherto regulated environment. In this market upheaval, banks lost their big customers as they were shifted away from bank borrowing towards other financing methods including retained profits, corporate bonds, international financial market, etc. Due to decrease of the large firms' dependency on banks borrowing, banks shifted aggressively their mode of investment to the small and medium enterprises (SMEs), NBFIs and real estate businesses.

Along with the structural changes in the Japanese financial system, the "monetary phenomenon" made the situation more critical. In order to counter the recession brought about by the rapid appreciation of the yen after the Plazza Accord in 1985, the BoJ lowered discount rate five times as part of monetary easing between 1986 and 1987. At that time, money supply was increased by more than 10 per cent. The commercial banks took this opportunity of protracted monetary easing to lend aggressively to the SMEs and real estate market in order to increase their short term profit. This has been possible due to lack of prudential regulations. Also, lower tax on holding of land and higher tax on transaction of land created demand and supply gap in the real estate sector, which contributed to rapid rise of asset prices. With these favourable situations, banks lent aggressively to the SMEs and contributed in creating asset price bubble and transmitting the shocks to the economy after collapse of the bubble.

Here it might be important to note the way the bubble had burst. As part of BoJ's monetary tightening and government's effort to curb land prices, the bubble started to burst in 1990, leading to asset prices falling sharply, many debtor

companies becoming bankrupt, and creditor companies having a huge burden of non-performing loan (accumulated direct write-offs stood around 9 per cent of GDP in 1999; Okina *et al.* 2001).

Diagram 1: Transmission Channel of Shocks during Asset Price Bubble
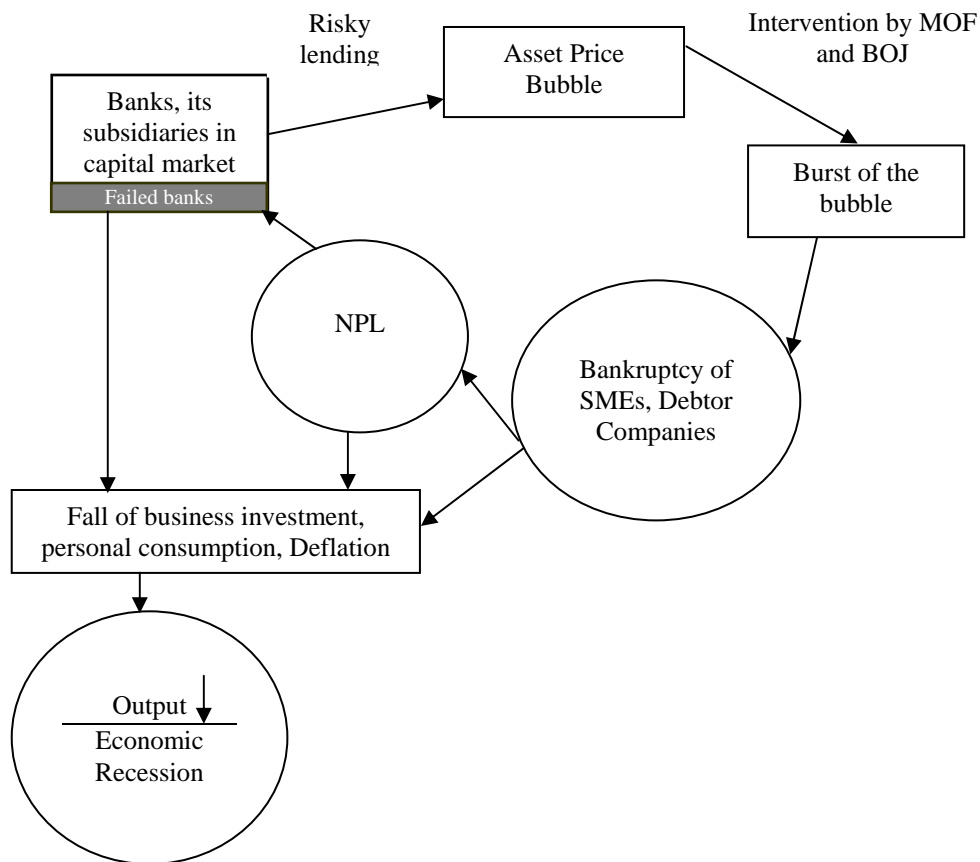

The above diagram shows how the banks have acted as a transmission channel for shocks to the economy during the bubble period. The new mode of investment of banks to the SMEs made their portfolio inefficient and the actual and expected return varied significantly. Banks failed to model capital asset pricing successfully by considering all associated risk factors of the market. Bank management was not efficient enough to anticipate the asset price fluctuations. As a result, banks were

burdened with huge amount of NPL due to bankruptcy of the debtor companies and incurred huge loss as the collateral assets became uncollectible due to continuing plunge of land/stock prices. This issue also pinpoints the moral hazard and adverse selection due to asymmetric information in the SME market.

It is evident from the discussion that if banks were not dependent on enterprise group and/or if they had been prepared for ongoing deregulatory measures, they would not have had undertaken speculative behaviour and would not suffer from moral hazard and adverse selection problems. This ultimately exhibited structural changes to the banking system accompanied by weak regulatory measures in Japan.

The Japanese banks were under downward pressure of profit during the heyday of the Japanese economy in the 1970s and got momentum after liberalisation started (Figure 1). Figure 1 shows that the declining trend of profitability of Japanese banks continued from 1970 to 1998 except a spike in 1989, at the time of bubble. The usual question is why banks' profitability was declining during the high economic growth period of Japan? Were the banks ever caring about their declining trend of profit? Following the discussion in the previous sections, undirected liberalisation that led to frustration for the banks, along with downward pressure of profit, acted as catalyst for banks to behave aggressively during the asset price bubble period. It is therefore important to analyse the declining trend of profits in the backdrop of their activities during the bubble.

Figure 1: Japanese Banks Profitability during 1964-1998
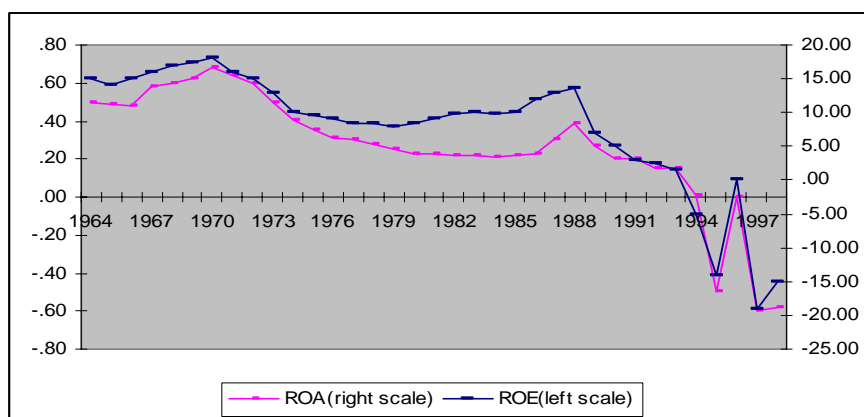
Source: Authors' estimation

There are some explanations on the declining trend of bank profitability. How the average profit of the main bank system was declining during the regulated

period can be explained as follows. "Over-loan", that is, borrowing from the central bank with low discount rate and lending it to enterprises with high interest rate was one of the main sources of profitability of banks. City banks (larger banks) have lent more funds than they could raise through deposit mobilisation, while regional banks had surplus of budget. So there was an imbalance of fund. Sometimes, to meet up the enterprise groups' excess demand for money, bank borrowed from call money market with high interest rate and lent it to its affiliated firm with the existing (usually lower) interest rate. This preferential loan contributed towards the declining trend of bank profit. Thus, borrowing short and lending long created a mismatch in the financial system as there are some maturity gap (exact data are not available) between the deposit fund and loan portfolio. This structural weakness affected profitability of the "main bank" system of Japan. Perhaps, banks were not much aware about the profit because they were competing amongst themselves for market share rather than profit (Yoshino and Sakakibara 2002), and they were backed by the group. Lending risk analysis could be biased due to the presence of directors of enterprise firms in banks. There is also possibility of window dressing[6] in bank's profit, which could overestimate the actual profit of banks.

With the pace of financial deregulation that started in the mid–1970s, capital market became more open to large firms and large firms' dependency on banks' borrowing gradually declined. The scope of cross-shareholding had also shrunk. As the banks lost their large corporate customers, they rushed to find new borrowers and projects. This situation compelled banks to think about the profitability for their survival and they found themselves in the surface of tough reality. Protracted monetary easing after Plaza Accord added fuel to their efforts of increasing short term profit.

Another factor is the Postal Saving Scheme that also contributed to the low profitability of banks as it created distortion in the financial market by paying higher interest rates than banks. The interest rates of the postal certificates are not determined by the market considering the risk and return. It is also not possible for banks to compete with postal savings by offering higher interest rates due to some unfavourable situations of the economy, such as deflation. This is an important issue for the financial sector of Japan as the deposit of Postal savings scheme stood at around 30 per cent of the total bank deposits due to its favourable interest rate (Yoshino 2000).

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[6]Bank sometimes manipulate their financial statements to show an inflated position of their performance by taking favour from their own enterprise group. This unfair means is termed as Window Dressing.

IV. DATA AND METHODOLOGY

The main objective of this paper is to analyse the profitability of Japanese banks and examine whether the monetary phenomenon and overheated economic activity had any influence on banks profitability. The profitability variable is represented by two alternative measures: the ratio of profits to assets, i.e. the return on assets (ROA) and the profits to equity ratio, i.e. the return on equity (ROE). In principle, ROA reflects the ability of a bank's management to generate profits from the bank's assets, although it may be biased due to off-balance-sheet activities. ROE indicates the return to shareholders on their equity and equals ROA times the total assets-to-equity ratio. The latter is often referred to as the bank's equity multiplier, which measures financial leverage. Banks with lower leverage (higher equity) will generally report higher ROA, but lower ROE. Since an analysis of ROE disregards the greater risks associated with high leverage and financial leverage is often determined by regulation, ROA emerges as the key ratio for the evaluation of bank profitability (IMF 2002). Both ROA and ROE are measured as running year averages.[7]

To assess the effects of various factors on bank profitability, we choose only a few variables that are important in the light of our previous discussion. The regression model is specified as follows:

$$ROA_t = \alpha + \beta B_{i,t} + \delta M_t + \varepsilon_{i,t} \tag{1}$$

where $B_{i,t}$ is a vector of bank-specific variables at time t. Only total asset of banks is considered here to represent the bank size because economies of scale can lead bigger banks to operate with lower average costs, which could be an indicator of profitability irrespective of other condition. The logarithm of total asset is also a measure of bank size. M_t is a vector of time-varying macroeconomic variables, such as GDP growth, money supply (M2+CD) and central bank discount rate. Land price index is used as a proxy of asset price bubble. These variables are considered to capture the effects of macroeconomic and monetary phenomenon in the profitability of Japanese banks (Figure 2).The data are collected from the BoJ website and the IFS of the IMF.

Since we use the aggregate data for the period 1977-2002, macroeconomic variables are subject to time series properties. Therefore, we test the unit root properties of the macro and monetary variables by applying the Augmented Dickey-Fuller (ADF) test. The hypothesis of no unit root cannot be rejected at 5 per cent

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[7] Figure 1 presents ROA and ROE for the Japanese banking sector. The two ratios follow similar paths, increasing over time with a spike in 1999.

level (Table II). If explanatory varoiables display unit roots, an OLS regression cannot give precise and unbiased estimates. Therefore, we have applied the Vector Error Correction model to assess the relationship between banks profitability and other industry and macroeconomic variables. The results are reported in Table III.

TABLE II
RESULTS OF ADF UNIT ROOT TEST

Variable	Test Statistic	Test at First Difference	Remark
ROA	-1.39	-6.44***	I(1)
GDP	-2.51	-5.14***	I(1)
M2CD	-1.93	-5.06***	I(1)
LPIND	-1.12	-2.79**	I(1)
ASSET	-1.88	-1.70	I(2)
LASSET	-3.79***	--	I(0)

Note: *** and ** indicate significance at 1 per cent and 5 per cent level respectively.

V. EMPIRICAL RESULTS

On the basis of evidence from various diagnostic and specification tests, the final specification of the statistical model in Equation (1) was finally estimated as a Vector Error Correction (VEC) model—up to two lags are allowed for each of the endogenous variables in the VAR. This final specification served as the basis for assessing the influence of domestic outputs and money supply as well as asset price bubble on both the short and long run variation of bank profitability (represented by the ROA) in Japan.

The estimated long-run relationship (t-ratio in parentheses) in respect of ROA can be written as:

$$\text{ROA}_t = -28.92 + 1.86\ \text{ASSET}_{t-1} - 0.11\ \text{GDP}_{t-1} + 0.23\ \text{M2CD}_{t-1} - 0.02\ \text{LPIND}_{t-1} \qquad (2)$$
$$\qquad\qquad (21.2) \qquad\quad (-4.99) \qquad (13.89) \qquad\quad (-22.74)$$

Estimates in Eq. (2) suggest that all the four variables, such as bank size (asset), GDP, money supply and land price have long run association with bank profitability. While bank asset (size) and money supply have positive impact, GDP and land price index have negative impact. This reflects the fact that during the heyday of the Japanese economy, banks profitability was declining due to the "main bank" structure as is evident in Figure 1. Protracted monetary easing also contributed positively with banks profit as banks extended loan aggressively to different sectors. On the other hand, asset price bubble, represented by the LPIND,

is negative because of the burst of the bubble in the middle of the time series; however, the effect is smaller than those of other variables (0.02).
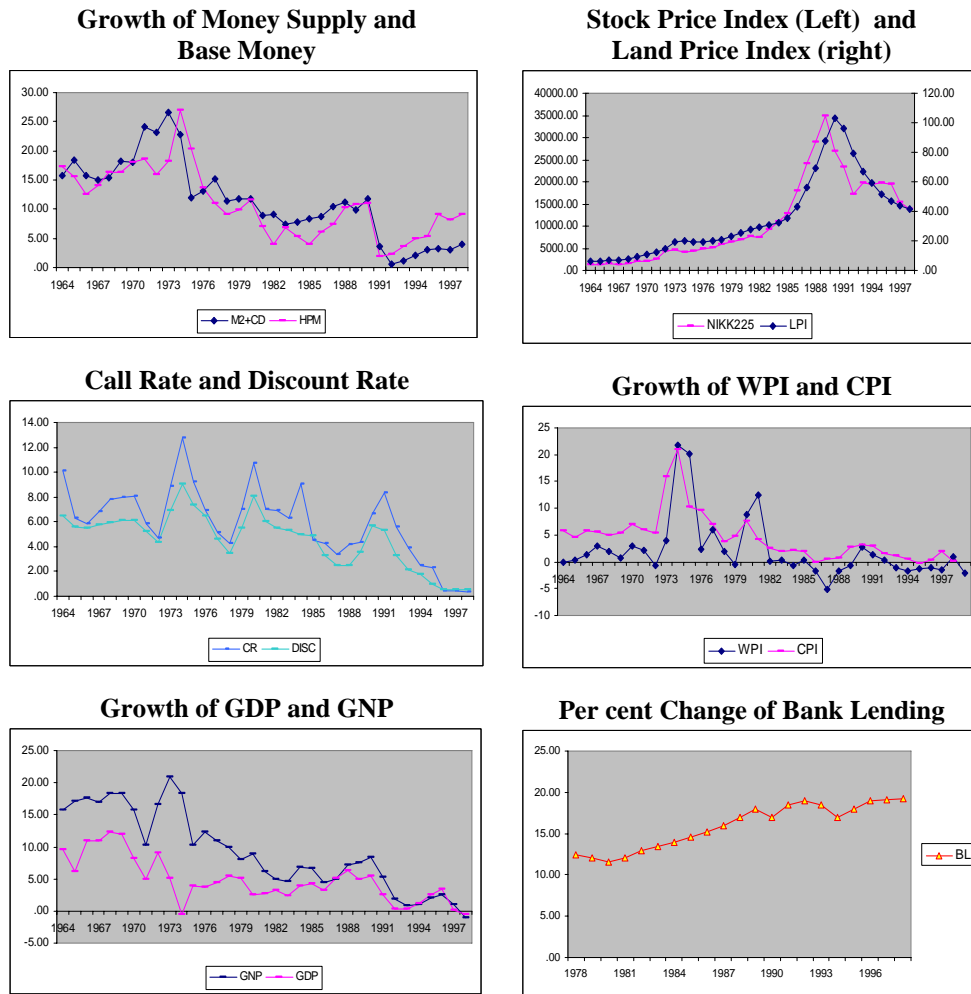
Table III presents the short-run components of the VECM. Adjusted R^2 and F-statistics suggest that the variables in the VECM significantly explained short-run changes in ROA of Japanese banks. Negative impact of past ROAs on the present ROAs implies that banks behave desperately to increase profitability considering long-term declining trend. Overheated economic activity represented by real GDP growth has positive impact on the profitability. While long run relationship between ROA and money supply has been positive, in short run, it is negative and significant. On the other hand, land asset price has no significant impact on profitability in the short run.

TABLE III
ESTIMATED VECTOR ERROR CORRECTION MODEL

	D(ROA)	D(ASSET)	D(GDP)	D(M2CD)	D(LPIND)
D(ROA(-1))	-2.43	-0.11	-2.87	-13.89	-44.55
	[-5.16]	[-1.44]	[-0.46]	[-3.18]	[-4.08]
D(ROA(-2))	-0.91	-0.06	-3.40	-11.47	-30.80
	[-2.39]	[-0.94]	[-0.68]	[-3.26]	[-3.50]
D(ASSET(-1))	1.80	0.550	-17.61	-17.28	31.22
	[1.05]	[1.89]	[-0.78]	[-1.09]	[0.79]
D(ASSET(-2))	-1.91	0.71	37.61	41.74	158.66
	[-1.03]	[2.24]	[1.53]	[2.43]	[3.70]
D(GDP(-1))	0.12	0.007	-0.08	0.92	3.57
	[3.59]	[1.28]	[-0.19]	[2.83]	[4.37]
D(GDP(-2))	0.004	0.01	-0.26	0.94	3.31
	[0.15]	[2.56]	[-0.67]	[3.40]	[4.77]
D(M2CD(-1))	-0.26	-0.01	-0.25	-2.18	-5.36
	[-4.90]	[-1.12]	[-0.36]	[-4.45]	[-4.37]
D(M2CD(-2))	-0.08	-0.005	0.10	-0.71	-1.83
	[-3.23]	[-1.29]	[0.32]	[-3.10]	[-3.19]
D(LPIND(-1))	-0.01	0.002	0.04	0.31	0.64
	[-1.42]	[1.47]	[0.31]	[3.03]	[2.50
D(LPIND(-2))	-0.03	-0.006	-0.28	-0.77	-2.08
	[-2.34]	[-2.94]	[-1.68]	[-6.49]	[-6.97]
C	-0.001	-0.02	-1.29	-2.23	-11.19
	[-0.02]	[-1.41]	[-1.14]	[-2.79]	[-5.61]
Adj. R-squared	0.69	0.85	0.19	0.69	0.88
F-statistic	5.48	12.74	1.48	5.50	16.87
Log likelihood	23.26	63.84	-35.99	-27.85	-48.91

Note: t-values are in parentheses. "D" indicates first difference.

Figure 2: Different Indicators of the Economy during 1964-1998

Growth of Money Supply and Base Money

Stock Price Index (Left) and Land Price Index (right)

Call Rate and Discount Rate

Growth of WPI and CPI

Growth of GDP and GNP

Per cent Change of Bank Lending

Source: Bank of Japan.

VI. CONCLUDING REMARKS

In this paper an attempt has been made to test the hypothesis that long term declining trend of profitability has deepened due to undirected and partial deregulations, which later had forced banks to undertake speculative behaviour during the bubble period. Our results suggest that while bank size and money supply

have a positive and significant association with banks' profitability, GDP growth has negative effect. Asset price bubble has negative effect on profitability in the long run; however, it has no significant short-run effect. This supports the assumption that asset price bubble has no such significant effect on bank profitability in the short run, rather long term declining trend of profitability due to the main banking system has had effect on banks aggressive behaviour during the bubble period. Monetary easing at that time also added fuel to the situation. The results also indicate that undirected financial liberalisation might have affected banks profitability, which ultimately led to a crisis after burst of the bubble.

Thus, the two issues—partial or undirected financial deregulation and monetary policy measures during the bubble period–were perceived to have contributed to the speculative behaviour of the banks. As discussed in the paper, the timing and pace of monetary policy measures to burst the bubble was not deemed as appropriate. This has led to the prolonged banking and economic crisis in Japan in the 1990s. The issue underscores the need for analysing the change in policies.

The case of Japan in the context of the rise and burst of the asset price bubble and subsequent banking crisis could be instructive for many countries including Bangladesh that are facing the asset price bubble situation. Bubbles generally arise out of some combination of irrational exuberance, jumps forward in technology and financial deregulation, for which the connection between monetary conditions and the rise of bubbles cannot be denied. Japanese experience suggests that monetary policy should respond to asset bubbles in a cautious and moderate manner in order to avoid economic distortions. The lessons that can be learned from the Japanese experience are: (i) central bank's role to burst bubbles must depend on the degree of efficiency of the financial sector; and (ii) the speed to burst the bubble must be based on the overall economic situation.

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