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Three years ago at this same conference, I was given an opportunity to talk about Japan's monetary policy in the years when asset price bubbles expanded.¹ Today, I would like mainly to review monetary policy in the following phase when the bubbles burst, for an asset price swing is the "changing economic environment" most relevant to us. Incidentally, we are now in the third phase when the economy is in a "liquidity trap," which I will leave for a future topic of discussion.

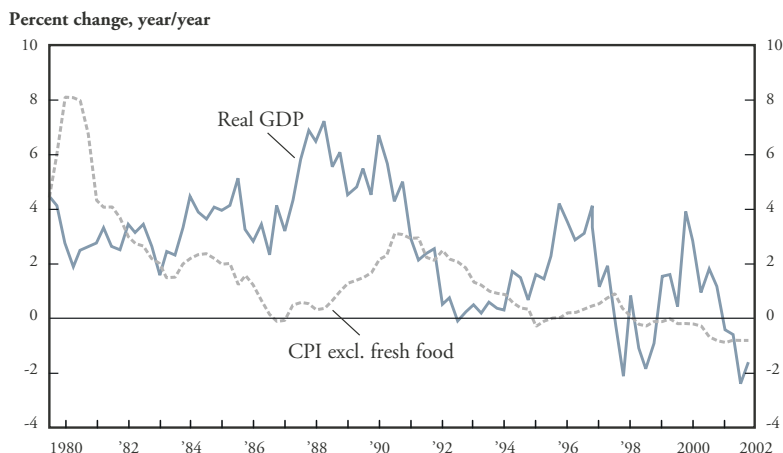
I have to start with a bit of an old story. The Tokyo stock market peaked in late 1989. The bubble in the property market—and in Japan real estate had far greater market capitalization relative to stocks—persisted about a year longer. A growth slowdown followed. The trend growth rate in the 1990s is just 1 percent per year on average, a marked shift downward from 4 percent in the 1980s (Chart 1).

There is little doubt that the bursting of asset price bubbles contributed significantly to the decline in the trend growth rate. But it was not the sole reason. Against the backdrop of a changing environment, such as a rapidly aging society and limited export-led growth, a prospective shift to more moderate growth was already broadly envisioned in the

Deputy Governor Yamaguchi's remarks, "Monetary Policy in a Changing Economic Environment," are on the bank's website at www.kc.frb.org. The author benefited from discussions with his colleagues of the Bank of Japan, especially Kunio Okina and Masaaki Shirakawa. The views expressed, however, are those of the author.

Chart 1

ECONOMIC GROWTH AND INFLATION



Note: Figures for the CPI are adjusted for the impacts of the consumption tax, which was introduced at a rate of 3 percent in April 1989, and increased to 5 percent in April 1997.

Sources: Ministry of Public Management, Home Affairs, Posts and Telecommunications, Consumer Price Index; Cabinet Office, Annual Report on National Accounts.

early 1980s. The economic system, which had been built on the premise of high growth, needed to be modified and, in fact, was already in the middle of significant structural adjustment in the mid-1980s.

The asset price bubbles not merely interrupted this process but turned the clock backward. The excessive optimism, the main feature of a major asset bubble, induced businesses to build up capital stocks, payrolls, and debts that would have made sense only under a sustained acceleration of growth. When the bubbles burst, the ensuing adjustment and workout had to be all the more painful and prolonged.

This aspect of Japan's asset market bubble, with its consequences for the structural adjustment in the 1990s, is important because it illustrates the specific environment in which the Bank of Japan (BOJ) had to conduct monetary policy. In other words, monetary policy conducted in a different context should be assessed in the light of each unique historical setting, and its effects should be different where, for instance, a need is less evident for a structural shift to lower growth.

In July 1991, the BOJ started to cut the Official Discount Rate (ODR), then at 6 percent. Those were the days when production and the CPI showed signs of acceleration and substantial uncertainty existed as to whether the business cycle had peaked. Re-emergence of a land price bubble was a more convincing scenario than a sustained asset deflation. Therefore, the ODR cut in mid-1991 received harsh criticism in and outside the country as a premature relaxation.

In retrospect, it turned out to be the first of a series of reductions, and by September 1995 the ODR was as low as 0.5 percent—the level some economists regard as a possible threshold to a liquidity trap. In about a four-year span, the sizable room for interest rate reduction had essentially been used up.

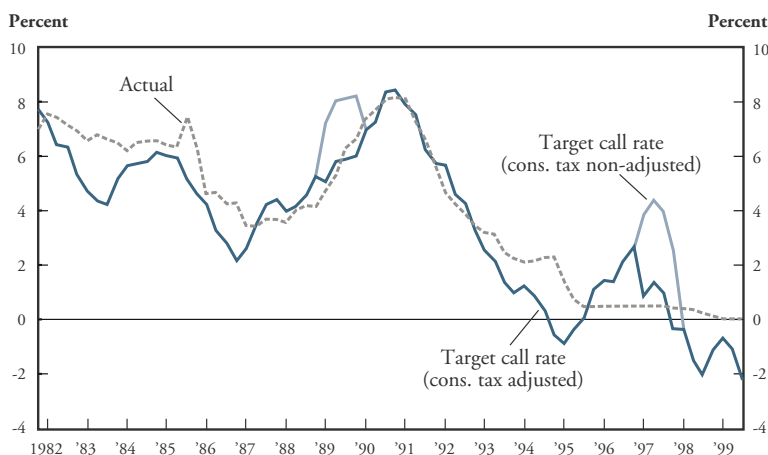
The BOJ has often been criticized for an alleged delay in monetary easing. Significant research has been conducted, including studies by the BOJ staff as well as by the Federal Reserve Board staff, to assess the easing path by applying a standard backward-looking Taylor rule as criteria.² One such study concluded that monetary easing after the bubble burst, particularly in the crucial early stage of relaxation, could be considered generally appropriate as a standard stabilization policy based on real-time financial and economic indicators as well as market forecasts (Chart 2). And yet, even with a policy response that could be considered appropriate in normal times, there emerged a substantial decline in the trend growth rate as well as a rapid and continuous fall in asset prices that weakened the financial system and destabilized the economy.

Against the background of the post-bubble economic performance of Japan, the views have been expressed that the bank should have gone beyond standard stabilization policy and tried more aggressive easing before monetary policy became constrained by the zero nominal bound.

Let me briefly examine two aspects of such views. The first is the practical feasibility, which partly depends on the predictability on a real-time basis of a post-bubble economic trend. The second is the effectiveness of an aggressive monetary policy to mitigate the adverse effects stemming from the bursting of asset price bubbles.

Suppose a central bank decides to ease dramatically beyond “standard” or rule-based guidelines at an early stage. The intention would be to pre-emptively accelerate inflation to avoid the future risk of deflation when, as in the case of Japan, some but not all asset prices are falling

Chart 2
TAYLOR RULE



Notes: 1. Taylor rule is defined as follows:

Basic equation: $R_t = r_t^* + \pi_t^* + \alpha(\pi_t - \pi_t^*) + \beta(Y_t - Y_t^*)$

r_t^* : Equilibrium real short-term interest rate at period t

π_t^* : Targeted rate of inflation

R_t : Uncollateralized overnight call rate at period t

π_t : Rate of CPI inflation at period t

$Y_t - Y_t^*$: Output gap at period t

where α and β are equal to 1.5 and 0.5, respectively.

2. Target rate based on Taylor rule, shown in bold line, is adjusted for the introduction of the consumption tax (3 percent) in April 1989, and an increase in its rate (to 5 percent) in April 1997. For reference, the consumption tax non-adjusted series is also plotted as the shaded line.

Sources: Kunio Okiina and Shigenori Shiratsuka, "Asset Price Bubbles, Price Stability, and Monetary Policy: Japan's Experience," IMES Discussion Paper 2001-E-16, Institute for Monetary and Economic Studies, Bank of Japan, 2001, Chart 7.

sharply, economic growth is still fairly robust, and inflation is mild. The accelerated inflation rate required to offset the negative shock generated by the bursting asset bubbles should well-exceed the target if the country in question is pursuing an inflation-targeting policy.

The central bank pursuing such a strategy would have to be acutely concerned, substantiated by quantitative analyses, about the risk of deflation a few years into the future. Without such a superb insight, it would be hardly possible for a central bank to abandon a price target, explicit or implicit, at a stage when deflation is yet a remote risk.

Economic predictions are inevitably clouded by uncertainties. What makes economic reading in the post-bubble period uniquely difficult is the great uncertainties associated with asset market developments.

Table 1

FINANCIAL STRUCTURES

[1] Financial liabilities held by nonfinancial corporations (ratio to total financial liabilities)

	Percents		
	<u>Japan</u>	<u>U.S.</u>	<u>Germany</u>
Borrowing	38.8	12.1	33.3
Bonds	9.3	8.2	1.3
Shares and equities	33.8	66.6	54.3
Others	18.1	13.0	11.0

[2] Financial assets held by households (ratio to total financial assets)

	<u>Japan</u>	<u>U.S.</u>	<u>Germany</u>
Currency and deposits	54.0	9.6	35.2
Bonds	5.3	9.5	10.1
Investment trusts	2.3	10.9	10.5
Shares and equities	8.1	37.3	16.8
Insurance and pension	26.4	30.5	26.4
Others	3.9	2.2	1.1

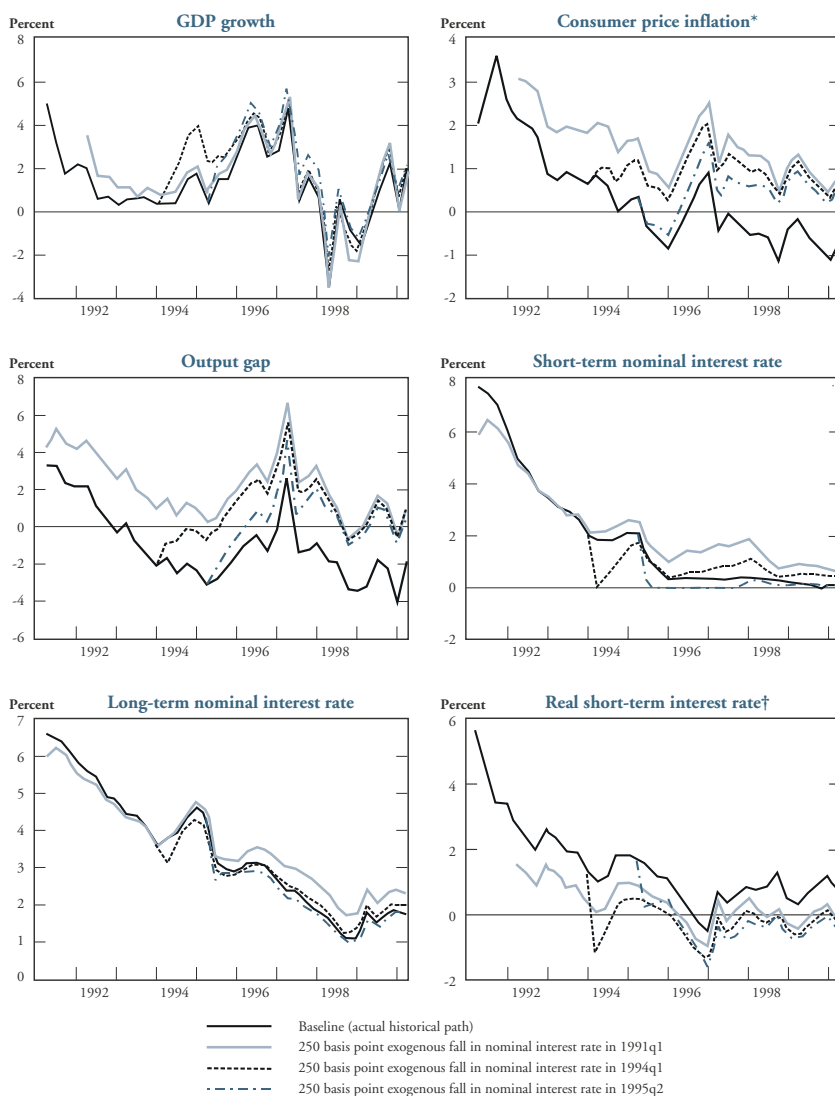
Notes: [1] Figures are those for the end of 1999. [2] Regarding financial debt for enterprises, stocks are evaluated at market value, and, thus, do not necessarily correspond to the accumulated funding by enterprises. It should be noted that equities are likely to be higher for the U.S., compared to those for other countries, because net worth of sole proprietorships are included as households' equities.

Source: Bank of Japan, Research and Statistics Department, "Japan's Financial Structure: In View of the Flow of Funds Accounts," Quarterly Bulletin, 9(1), Public Relations Department, Bank of Japan, 2001, pp.105-142.

First, we cannot be sure how the asset markets will develop and when an equilibrium with the real economy will be restored. In addition, different asset segments can show divergent price patterns, as in Japan's stock and real estate markets in 1990. Such divergence can emerge at an early stage when inertia of wishful thinking lingers with the confusing effects on expectations. Thus, the capital loss and the harm to the financial health of businesses and households are extremely difficult to estimate.

Second, uncertainty also exists in the transmission mechanism between asset prices and real activity and inflation. In an economy like Japan's, where banks dominate financial intermediation, capital losses tend to accumulate gradually in the banking system (Table 1). Indeed, there was a presumption that shocks would be contained within the financial sector and would not spread to the real side of the economy.

Chart 3

SIMULATION OF HYPOTHETICAL EARLY
MONETARY EASING

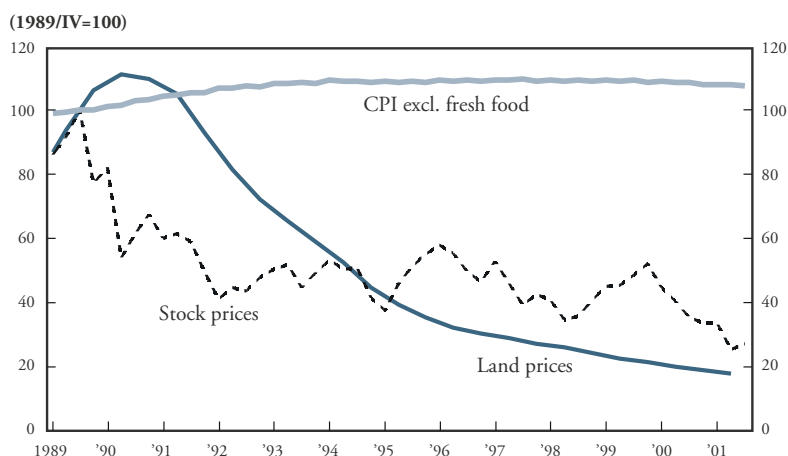
* Adjusted for estimated effect of consumption tax increase in 1997q2.

† Short-term nominal rate minus consumer price inflation over the previous four quarters.

Source: Alan Aherne, and others. "Preventing Deflation: Lessons from Japan's Experience in the 1990s," International Discussion Paper no. 729, Board of Governors of the Federal Reserve System, 2002, exhibit IV.2.

Chart 4

ASSET PRICE DEFLATION



Sources: Bank of Japan, *Financial and Economic Statistics Monthly*; Ministry of Public Management, Home Affairs, Posts and Telecommunications, Consumer Price Index; Japan Real Estate Institute, Urban Land Price Index.

Therefore, there was a widespread belief that the situation would turn around if business could be sustained until land prices started to rise again. When bank capital was eroded to a critical threshold, however, an acute credit crunch erupted. It is against such an uncertain setting that economic forecasting must incorporate the timing and magnitude of the “headwind” generated by the deteriorating balance-sheet conditions of businesses, households, and particularly banks.

Let me turn to the second aspect—namely, the effectiveness of a hypothetical early easing. Some simulation results indicate that such a policy would have elevated the inflation rate to a level that would have worked as a comfortable cushion against future deflation (Chart 3).

An important point here is what lies at the root of the predicament of Japan’s economy and financial system. Admittedly, under the non-negativity constraint of nominal interest rates, real rates will be pushed up by the extent of deflation, even though deflation itself is rather limited at less than 1 percent per year in Japan now. However, as suggested by Chart 4, asset price deflation, which has been continuous for ten years at an annual rate of close to 10 percent, has likely exerted far greater pressure on activity than slightly positive real interest rates.

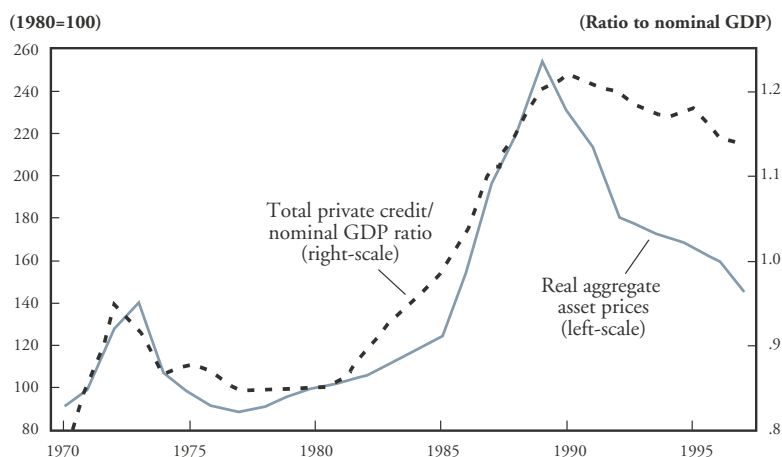
The question from my perspective is: Could aggressive easing have significantly moderated the fall of real estate prices and, therefore, the balance-sheet problem? Generally speaking, significantly lower interest rates should be conducive to a tighter output gap, higher inflation, and, when the asset market is falling, a moderate asset price decline. Would such results be achieved by aggressive easing in the aftermath of an asset bubble? I am skeptical.

We have witnessed time and again that after asset inflation has developed into a major bubble, it is impossible to “soft land” the market. That being the case, and if the asset market in question has traditionally served as a sort of anchor for financial stability, as with real estate in Japan, the capacity of monetary policy to stimulate demand and inflation is bound to be severely impaired. Even if such a strategy had proved to be successful, it would only have delayed the inevitable adjustment between asset prices and economic fundamentals.

If a central bank’s predicting ability of post-bubble developments has to remain less than perfect, would it be better once again to consider aggressive tightening when a bubble is perceived to be growing? This is the question I talked about three years ago here. I remain skeptical. However, given the fact that it is always the preceding massive flows of credit that become worthless once the tide is reversed, severely damaging the balance sheets of the parties concerned, it might be worth considering possible ways to focus on restraining “excessive” credit flows during asset market upswings (Chart 5).

Let me conclude by adding a few observations in somewhat broader context. It is ironic that, as the track record shows (Chart 1, Chart 2), the Bank of Japan followed a path in the 1980s and early 1990s that could be regarded as fully consistent with some policy rule, such as the Taylor rule, and yet suffered from the wildest swings of asset markets. Suggestions have been made that the bank should have deviated from such an implicit rule-based path, both in times of upswing as well as downswing. From my perspective, for discussions on policy rules to be more relevant and robust, they should at least take into account major swings of asset prices. Our experience shows that price stability, by making low interest rates possible, can pave the way to a major asset price bubble when it is coupled with excessive optimism for the future.

Chart 5
CREDITS AND ASSET PRICES IN JAPAN



Note: Real aggregate asset price indices are a weighted average of equity and residential and commercial estate price indices deflated by consumer prices. The weights are based on the composition of private sector wealth.

Source: Bank of International Settlements, *Quarterly Review*, International Banking and Financial Market Developments, August 1999.

Finally, what matters most in the post-bubble development is the magnitude of the lost capital and its distribution (that is, who in the system has to absorb the loss). In Japan, that magnitude has been overwhelming and has been concentrated in the banking sector.

When an economy is faced with the size of lost capital, as in Japan, a well-functioning financial infrastructure is crucially important for its prompt resolution. Infrastructure in this context includes proper accounting, disclosure, disciplined governance, an incentive mechanism, and supervision. Japan was slow in developing and putting into place such a framework.

I emphasize this aspect because if expeditious and forceful progress had been made to deal with the capital loss in general and that of the banking system in particular, monetary policy in Japan might have found a different environment in which to operate. Amid a major shock, such as the collapse of key asset prices, a need to address the nexus of monetary and prudential policies cannot be overemphasized.

ENDNOTES

¹ Yutaka Yamaguchi, "Asset Prices and Monetary Policy: Japan's Experience," in *Proceedings of a Conference on New Challenges for Monetary Policy* (Federal Reserve Bank of Kansas City, August 26-28, 1999).

² See, for example, Naruki Mori, Shigenori Shiratsuka, and Hiroo Taguchi, "Policy Responses to the Post-Bubble Adjustments in Japan: A Tentative Review" (Monetary and Economic Studies, 19 (S-1), Institute for Monetary and Economic Studies, Bank of Japan, 2001); and Kunio Okina and Shigenori Shiratsuka, "Asset Price Bubbles, Price Stability, and Monetary Policy: Japan's Experience" (IMES Discussion Paper 2001-E-16, Institute for Monetary and Economic Studies, Bank of Japan, 2001) as researched by the BOJ staff; and Alan Aherne, and others. "Preventing Deflation: Lessons from Japan's Experience in the 1990s," (International Discussion Paper no. 729, Board of Governors of the Federal Reserve System, 2002) Bank for International Settlement, 72nd Annual Report (Bank for International Settlement, 2002), as researched by staffs of overseas central banks and international organizations.