Kiyohiko G Nishimura: Macro-prudential lessons from the financial crises – a practitioner's view

Speech by Mr Kiyohiko G Nishimura, Deputy Governor of the Bank of Japan, at the Asian Development Bank Institute (ADBI) – Central Bank of Malaysia (Bank Negara Malaysia/ BNM) Conference on Macroeconomic and Financial Stability in Asian Emerging Markets, Kuala Lumpur, 4 August 2010.

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I would like to express my sincere gratitude to the hosts for inviting me to the ADBI–Bank Negara Malaysia Conference, and especially to this timely session: Macroeconomic Frameworks to Support Financial Stability.

In this presentation, I will touch on the issues of financial stability and central bank policies, based on two episodes of financial crisis: one dating from 20 years ago in Japan, and the other from two years ago in the United States. I first present one "stylized account" from a macro-prudential perspective of the buildup in financial imbalances that led eventually to the financial crisis in the late 1980s in Japan. Then, I illustrate the startling similarities between the recent US subprime-triggered experience and that of Japan in the 1980s. Examining these two crises, I will draw four implications for macro-prudential policy which are likely to be universally relevant, particularly in emerging economies. The message is simple and straightforward: Beware. So-called macro-prudential measures may not always be sufficient. This leads to the final topic, the role of monetary policy during the buildup of financial imbalances, a role which I would argue is, in a word, crucial. I will explain why in the course of this presentation.

1. Financial imbalances in 1980s Japan: a stylized account

I first present one "stylized account" from a macro-prudential perspective of the buildup to financial imbalances in Japan in the late 1980s.[1] This account is intended to be rather descriptive and schematic in the way that macro-prudential issues are highlighted. It is admittedly simplistic, but I believe this is a good starting point for discussion.

Deregulation-induced "financial innovations" and financial anomalies

A number of "financial innovations" introduced as a result of deregulation appear to have played a role in the late 1980s bubble in Japan. Under the designation of Financial Liberalization, deregulation sparked the arrival of new products such as CPs and large time deposits with unregulated rates, which nourished the atmosphere of profit-seeking through these "financial technology" products.[2]

Financial Liberalization was a gradual process that started in the late 1970s and spanned twenty years. Around 1986, signs of "financial anomaly" emerged, brought about by the innovations associated with Financial Liberalization. The most notable anomaly was the apparent no-risk arbitrage opportunity for large non-financial corporations. In 1985, banks became allowed to offer large time deposits with no regulation on their rates. Banks then offered short-term large time deposits to major non-financial corporations with rates higher

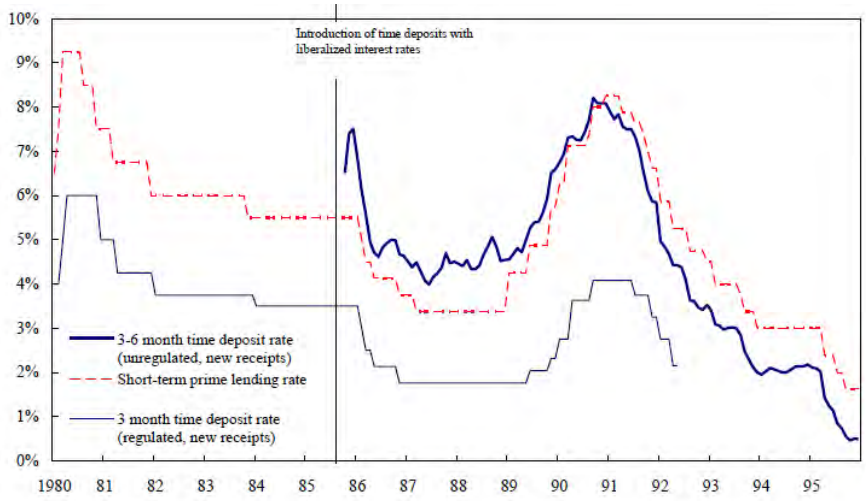
[1] This stylized account is partly based on Hattori, M., H. S. Shin and W. Takahashi, "A Financial System Perspective on Japan's Experience in the Late 1980s", IMES Discussion Paper 2009-E-19, Bank of Japan, 2009.

[2] These technologies were known at the time as *zai-teku* in Japanese.

than the corresponding-term CP rates. Thus, large non-financial corporations could profit from raising funds by issuing CPs and depositing them in these unregulated large time deposits (BOJ 1989[3]). By a similar token, 3–6 month unregulated time deposit rates were substantially higher than short-term prime lending rates (see Chart 1).

Chart 1

Time deposit rates and prime lending rates



Note: "3–6 month time deposit rate (unregulated, new receipts)" is the average interest rate on newly received time deposits with unregulated interest rates of terms between 3 and 6 months. "3 month time deposit rate (regulated, new receipts)" is the interest rate set by the regulation on newly received 3 month time deposits. Regulations on time deposit interest rates were abolished in 1993. The end-of-month data for 3 month time deposit rate (regulated, new receipts) are available up to May, 1992.

Source: Economic Statistics Annual, Bank of Japan.

These anomalies were often explained as banks' investment in "customer capital" in large non-financial corporations. These large non-financial corporations, who were once the good customers of the banks, had gained increasingly good access to capital markets through deregulation. If the banks could obtain and keep long-term customer relations with these corporations, the banks could profit from their clients' increased financial and other activities through increased fees and commissions. This was not an implausible position, since the banks themselves were being gradually deregulated and allowed to expand their business into securities markets and other activities.

Favorable capital market conditions and loosening of lending standards

At the same time, banks' profits surged and their capital positions strengthened, as shown in Chart 2. Banks tapped capital markets to raise capital easily, and their leverage ratio declined dramatically from around 160 in 1986 to around 60 in 1989, as shown in Chart 3.

[3] Bank of Japan, "*Shouwa 63 nendo no kinyuu oyobi keizai no doukou* (the Financial Markets and Economy in 1988)," (in Japanese), in *Chosa Geppo*, May, pp 1–61, 1989.

Chart 2

Net income/loss of Japanese banks

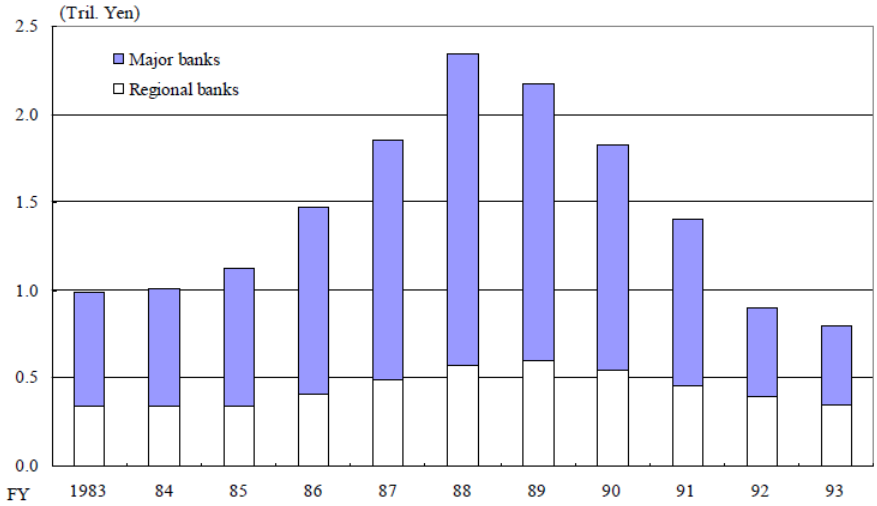
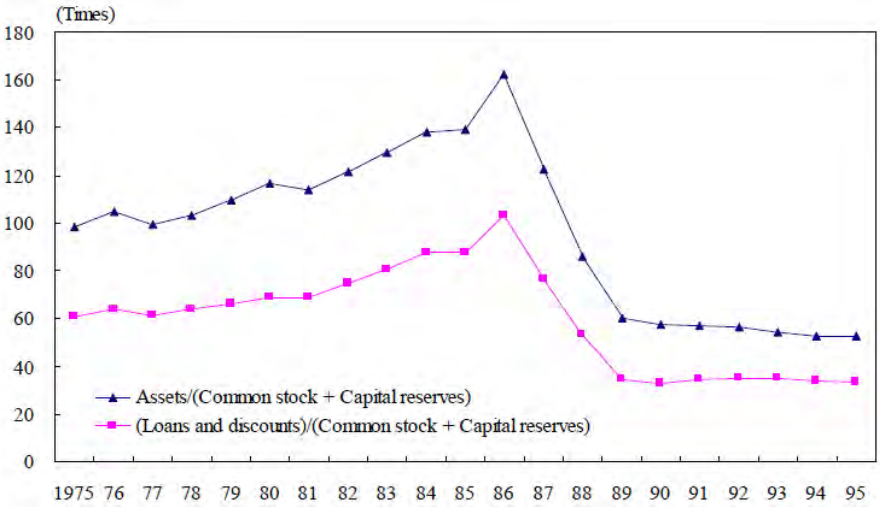


Chart 3

Leverage



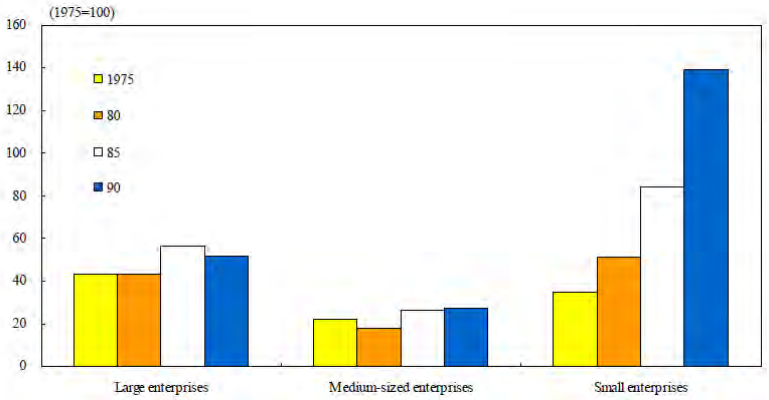
Note: All domestically licensed banks, excluding member banks of the Second Association of Regional Banks.

Source: Economic Statistics Annual, Bank of Japan.

With strong profit positions, loosened capital constraints through new equity issues, and substantial inflows of time deposits from large non-financial corporations, bank lending to real estate-related sectors surged, as did lending to small enterprises (see Charts 4 and 5), partly compensating for lackluster growth in lending to large non-financial corporations. Around this time, anecdotal evidence also emerged to suggest that banks had loosened their lending standards. Some banks transferred their loan-examination function from the loan-examination division of their headquarters to the loan-making divisions. Hence, the ratio of loan examination officers at the headquarters declined sharply in the 1980s, as shown in Chart 6.

Chart 4

Breakdown of corporate borrowers by size

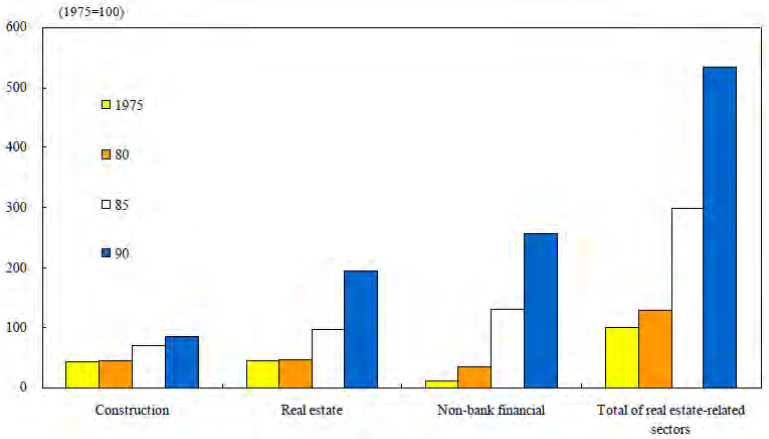


Note: All banks, excluding member banks of the Second Association of Regional Banks. Total outstanding loans used for calculations are outstanding loans and discounts to domestic corporate borrowers, excluding overdrafts. Large enterprises are corporations with capital of 1 billion yen or more and more than 300 regular employees. For the wholesale trade industry, the criterion for the number of regular employees is more than 100 persons. For the retail and service industries, it is more than 50 persons. Small enterprises are unincorporated enterprises as well as corporations with capital of 100 million yen or less or with regular employees of 300 persons or fewer. For the wholesale trade industry, the definition is corporations capitalized at 30 million yen or less or with 100 regular employees or fewer. For the retail trade and service industries, it is corporations capitalized at 10 million yen or less or with 50 regular employees or fewer. Outstanding loans for medium-sized enterprises are calculated by excluding those for small enterprises and large enterprises from total outstanding loans. Figures are deflated by GDP deflators. Total borrowings in 1975 in real terms = 100.

Source: Economic Statistics Monthly, Bank of Japan and National Accounts, Cabinet Office.

Chart 5

Bank lending to real estate-related sectors

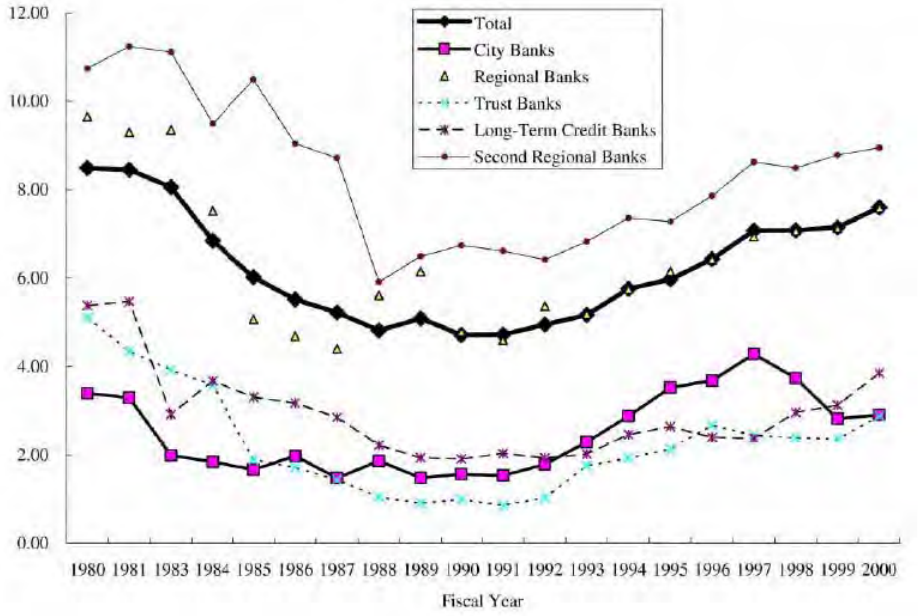


Note: All banks, excluding member banks of the Second Association of Regional Banks. Real estate-related sectors include real estate, construction, and non-bank financial. Total outstanding loans used for calculations are outstanding loans and discounts to domestic corporate borrowers, excluding overdrafts. Outstanding loans to the non-bank financial industry are the sum of those to the other financial industry and the lease industry. Figures are deflated by GDP deflators. Total lendings in 1975 in real terms =100.

Source: Economic Statistics Monthly, Bank of Japan and National Accounts, Cabinet Office.

Chart 6

Ratio of examining officers at the headquarters by bank-type and year



Source: Figure 1 in Fukao, K., K. G. Nishimura, Q.-Y. Sui and M. Tomiyama, "Japanese Banks' monitoring activities and the performance of borrower firms: 1981–1996," *International Economics and Economic Policy*, 2 (2005), 337–362.

Overlooked signs of excessive optimism

Around this time, there were signs of excessive optimism among investors, especially in property markets. Chart 7 illustrates the price-to-rent ratio in residential property markets in Tokyo,[4] based on hedonic price and rent price indexes of condominiums, and taking due account of vast differences in quality. (Rents here are market-determined new-contract rents, not institutionally rigid continuing-contract rents.[5]) This ratio surged from around 23 in 1986, which in retrospect looked like the long run average, to around 40 in one year, suggesting substantial overheating in property markets. After a short pause, the price-to-rent ratio shot up to a peak of around 50 in the fall of 1990 (even after the collapse of the stock markets).

However, it should be noted here that this quality-adjusted price-to-rent ratio has only recently become available. In the late 1980s, only appraisal price indexes for residential and commercial lands were available, with a substantial lag of half a year. There were no reliable rent data. Thus, there were no contemporaneous hard data showing investors' excessive optimism in property markets, though there were lots of anecdotes of property investors' excessive optimism. Moreover, in retrospect, the government itself was overly optimistic: it anticipated a substantial scarcity of office space partly because of internationalization of the Japanese financial markets in its "Metropolitan Reconstruction Plan" (1985), and in "The 4th National Comprehensive Development Plan" (1987).

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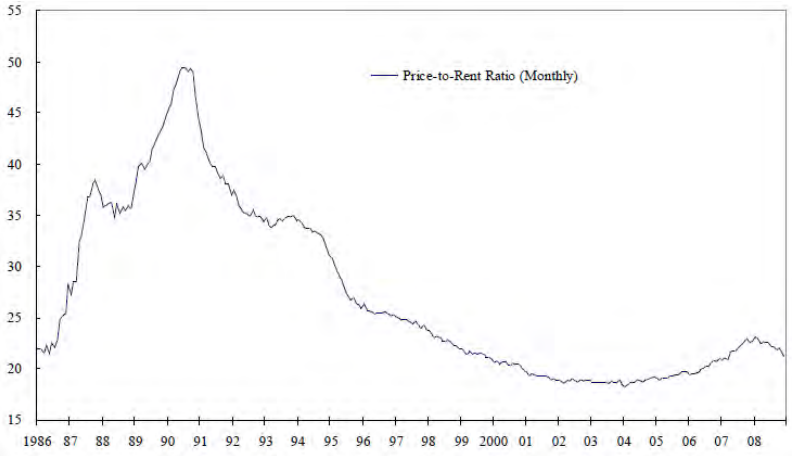
[4] See Shimizu, C., T. Watanabe, and K. G. Nishimura, "House Prices in Tokyo: A Comparison of Repeat Sales and Hedonic Measures" mimeo, Reitaku University and Hitotsubashi University, 2010.

[5] There is sizable rigidity in continuing rents partly because of institutional factors. The CPI rent is the weighted average of market-determined new-contract rents and institutionally rigid continuing rents with more weight on the latter. See Shimizu, C., T. Watanabe, and K. G. Nishimura, "Residential Rents and Price Rigidity: Micro Structure and Macro Consequences", *Journal of Japanese and International Economies* 24 (2010) 282–299.

Chart 7

Price-to-rent ratio of Tokyo residential area



Source: Author's calculation.

Central bank policy

Facing investors' excessive optimism and banks' loose lending standards, the Bank of Japan used its then-conventional window guidance to control banks' lending volumes. Although the direct control of lending through the practice of window guidance was criticized as a discretionary measure contrary to market principles, window guidance at a time of seemingly excessive optimism could be interpreted as one form of macro-prudential measure, albeit a crude one, to dampen excessive optimism through the exercise of moral suasion. However, as financial deregulation got under way, window guidance proved to be ineffective and failed to curb loans outstanding in the late 1980s.

What was the monetary policy stance at that time and the public's expectations about the policy? Around 1986, the market expectation was that the easy monetary policy would continue for a substantial period. This was partially due to the government's commitments in the international policy coordination pledged during that period. There were also confounding issues at the time: the fallout of Black Monday (October 19, 1987), the fear of a recession stemming from the substantial appreciation of the yen, and the lack of significant inflationary signs in the CPI. In fact, the policy rate was cut from 5% in December 1985 to 2.5% in February 1987, and remained unchanged for more than two years.

Then, as we know only too well, the stock market began to drop in January 1990, falling from more than 38,000 to around 16,000 in two and a half years.[6] The quality-adjusted Tokyo condominium price index continued to climb up until October of 1990 to triple the price of 1986, and then declined by about 30% in three years.[7] It continued declining through the 1990s, with the price in 2000 being approximately the same as that of 1986.

2. Similarity of the recent US experience to that of Japan in the 1980s

When considering this stylized account, one cannot help noticing the similarities between Japan's experience in the 1980s and recent events in the United States triggered by the subprime mortgage crisis.

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[6] The Nikkei index was 38,915 on December 29, 1989 and 15,951 on June 30, 1992.

[7] These quality-adjusted house price indexes are in Shimizu, C., T. Watanabe, and K. G. Nishimura, "House Prices in Tokyo: A Comparison of Repeat Sales and Hedonic Measures" mimeo., Reitaku University and Hitotsubashi University, 2010.

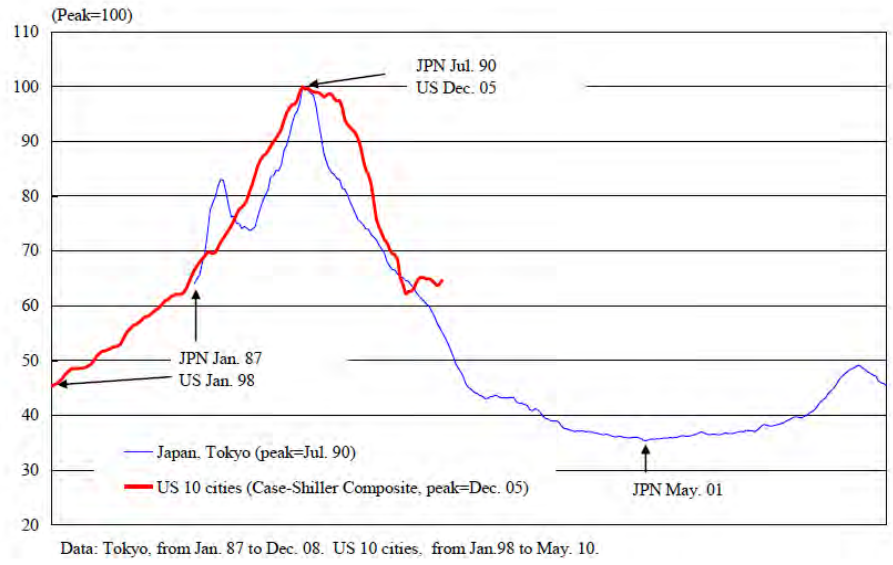
First, financial innovations were at least partly responsible for the buildup of financial imbalances. Securitization was thought to improve risk allocation, as risk was now borne by those who were more able to bear it. This reduced risk premiums (equilibrium or sustainable) for previously very risky investments, such as subprime mortgages. The financial sector could earn substantially higher profits from originating and distributing these securitized products. Taking advantage of this and other innovations, banks' profits increased and their capital market standing became more solid.

Second, there were signs of financial anomalies and loose lending standards. For example, CDO squares based on CDOs, which were in turn based on subprime mortgage pools, sometimes had a thick AAA tranche. It was argued that their pricing was based on a model proven to track the history well, but the history was usually too short to assure the model's sustained reliability. Again as we know only too well, their assumed correlations turned out to be wrong. In addition, there were reports of "low doc loans" and "no doc loans," especially in subprime mortgages.[8]

Third, there seemed to be signs of excessive optimism, at least in the booming states, though not as obviously as in late 1980s Japan. Unlike in late 1980s Japan, semi-contemporaneous house price indexes were available in the United States, including OFHEO (now FHFA) and Case-Shiller indexes, taking account of vast differences in quality of housing stock. In some parts of the United States, notably Los Angeles and Miami, price increases accelerated in the early 2000s, and more than doubled from 2001 to 2006. Unfortunately, there were no corresponding (new-contract) rent data, comparable to that shown before for Japan, with which to gauge excessive investor optimism by calculating price-to-rent ratios. However, since there was no report showing substantial rent increases relative to CPI in these areas, it might be appropriate to assume that the real price change coincided with the change in the price-to-rent ratio. Then, the real house-price change in ten large US cities (whose residents constitute roughly 10% of the US population) was comparable to that in Tokyo (where a similar percentage of the Japanese population lives) in the late 1980s, as shown in Chart 8.

Chart 8

Real house price developments in the United States and Japan



Source: S&P Case-Shiller Indexes, RRPI Indexes, US and Japanese CPI.

[8] "Low doc loans" and "no doc loans" are mortgage loans that require less than full documentation of income, employment, and assets.

The course of central bank policy in the United States is well known, and I will not repeat it in detail here. I will just point out that firstly, whatever macro-prudential measures were implemented at that time, were inadequate to curb excessive optimism, and secondly, monetary tightening was "measured" and long-term rates remained relatively low, stirring debates about this "conundrum".

3. Beware of anomalies and excessive optimism: implications for macro-prudential policy

So what lessons should we draw from these two episodes? Each crisis seems different from every other, so I should avoid oversimplification. However, the following four points are likely to be universally relevant, and especially so from the perspective of emerging economies.

Firstly, financial innovations often provide fertile ground for financial excesses or imbalances. This may not be surprising, since innovations sometimes make old knowledge obsolete: Veterans become novices and pros become amateurs. The old prudential measures look out of date. We are told that "this time is different," and that we should embrace these new ways of thinking. Often, these new ways of thinking disguise excessive optimism, as exemplified in the two episodes we have discussed. So, Beware.

Secondly, in the process of the buildup of imbalances, there are often signs of anomalies. In the past, these anomalies were often ignored as being isolated and having no macro significance, or explained as rational choices, such as investment for future returns. But if these anomalies are found to coexist with other signs of excessively optimistic investor forecasts, these are likely signs of the buildup of financial imbalances. This point is especially relevant if the signs are found saliently in property markets, which usually move slowly.

Thirdly, timely information about excessive investor optimism is of utmost importance in this regard. Price-to-rent ratios in property markets are one indicator of investor sentiment. Whereas information about price-to-earnings ratios is easily available in stock markets, corresponding (properly quality-adjusted) price-to-rent ratios in property markets are not easily available. This has, and still does pose a serious problem for macro-prudential policy, especially for emerging economies where property markets are becoming increasingly important.

To have timely information about proper price-to-rent ratios, or at least price indexes that are reliable and internationally comparable, is not only important for assessing the magnitude of financial imbalances that need rectifying, but also vital to communicate with the public, both inside and outside of the country. In this respect, it is highly recommended that price indexes be constructed consistent with prospective United Nations recommendations (due next year) on residential property price indexes, and that these indexes be published regularly in a timely manner. The Japanese price-to-rent ratios presented before are calculated from large data sets using hedonic regression methods, and are available monthly with approximately two weeks' lag.

Fourthly, if investors are excessively optimistic, a modest increase in capital requirements and leverage restraints may not be sufficient to curb such unwarranted optimism. The case in point is the increase in banks' new stock issues in Japan in the late 1980s and the dramatic decline of their leverage ratio during the buildup of the financial imbalances. This point is also relevant in contemplating maximum loan-to-value ratio requirements as macro-prudential policy. When the price doubles in a few years, it is relatively easy to comply with seemingly stringent maximum loan-to-value requirements, since the property's assessed value increases in tandem with market prices.

To curb excessive loans, it is important to have measures to restrain leverage. But at the same time we should better understand their limitations. They may be effective in some cases, especially for rather small buildups of financial imbalances, but perhaps not in other cases.

4. Excessive optimism and policy expectations: implications for monetary policy

Finally, let me turn to the role of monetary policy during the buildup of financial imbalances, and consider the implications of the analysis so far.

There are two strands of thought on this issue. One strand emphasizes that monetary policy is a blunt instrument affecting activity across a wide variety of sectors, many of which may not be experiencing speculative activity. To dampen speculative bubbles may require substantial changes in interest rates, which may hurt unaffected sectors. So in principle, it is better to use macro-prudential measures to counter financial imbalances, rather than monetary policy.[9]

The other strand of thought points out that letting financial imbalances balloon and then collapse may be too costly to bear, depending on the magnitude of these imbalances. Moreover, although regulatory reforms and other macro-prudential measures are now under consideration in addressing the issue of the buildup of financial imbalances, there remains substantial uncertainty about their effectiveness in the real world. It is therefore not wise to rule out categorically the use of monetary policy to address the issue of financial imbalances. Monetary policy could be used in tandem with macro-prudential measures, if, firstly, substantial imbalances are building up and, secondly, regulatory policies have proved to be insufficient.[10]

In retrospect, events in Japan in the late 1980s seem to support the second view. In particular, that episode satisfied the two requirements for the use of monetary policy in addition to macro-prudential measures to counter the buildup of financial imbalances.

Let me summarize what the stylized account of late 1980s Japan shows from the perspective of monetary policy. Around 1986, investors' expectations of investment returns were substantially elevated, especially in property markets, though grossly erroneously in retrospect. And at the same time, market expectation was that monetary easing would continue and the policy rate would remain low for a substantial period. This combination of elevated investment-return expectations and market expectation of continuously low policy rates accelerated property investment, both residential and commercial, though especially the latter.

Property investment is a long-term, irreversible investment. It is a lengthy process from starting to find a lot to final dedication, and once built for a particular purpose, it is difficult to change usage. This is especially important in Japan, where some urban redevelopment may take years. Thus, not only the current policy rate but also the expectations of its future course have a significant effect on investment decisions. Consequently, the expectation of continuing monetary easing significantly encouraged property investments, and particularly those in commercial properties.

Because of the inherent irreversibility, the excessive optimism inflicted a huge scar on Japanese commercial property markets. The quality-adjusted commercial land price index of Tokyo's central business districts was 2.161 in 1999 (1975 index = 1), down from its height 16.556 in 1990.[11] It is mind-boggling to imagine how this 87% decline in commercial land prices in the heart of Tokyo, which is the center of the Japanese economy, affected business activity in general. The same is true for residential property markets, though to a lesser extent. Moreover, since investment in industrial sectors is often long-term and irreversible,

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[9] This view has been expressed notably by many Federal Reserve officials in the past.

[10] This view is articulated in White, W., "Is Price Stability Enough?" BIS Working Paper No. 205, April 2006, Bank for International Settlements.

[11] See Figure 1 in Shimizu, C., and K. G. Nishimura, "Biases in appraisal land price information: the case of Japan", *Journal of Property Investment and Finance*, 24 (2006) 150–175.

they also suffered serious overcapacity and misallocation problems caused by the excessive optimism of the late 1980s and its subsequent collapse.

In retrospect, taking account of the devastating effects of excessive optimism and also the ineffectiveness of macro-prudential measures (in particular, window guidance as explained before), few would disagree that monetary policy should have played a role in attempting to rein in excessive optimism, provided that this had been detected at the time.

This episode teaches two lessons about the role of monetary policy and its relation to macro-prudential measures in the process of the buildup of financial imbalances.

Firstly, when excessive optimism prevails in the market, macro-prudential measures alone may prove to be insufficient, and we may need monetary policy on top of these macro-prudential measures to rein in such excessive optimism. When investors are overly optimistic, asset prices go up to make it easy for banks to comply with, for example, increased capital-buffer requirements and more stringent loan-to-value ratio requirements. Moreover, when financial imbalances are sizable, they are likely to broadly affect many sectors of the economy, as exemplified by 1980s Japan, and this may justify the use of monetary policy.

Secondly, when excessive optimism prevails and investment-return expectations rise erroneously, the central bank should be careful to avoid nourishing expectations of prolonged low interest rates relative to their long-run, sustainable levels. These expectations are likely to fuel investment activities further, especially in property markets. This increases the magnitude of possible future winding down.[12]

In this respect, there is an important informational factor through which the central bank's action or inaction influences market expectations. When excessive optimism emerges, a lack of action by the central bank may convey the wrong signal to the public. The central bank is responsible for the price stability that ultimately ensures the stability of economic activity. If there is no correspondent increase in prospects for economic growth, a sharp increase in investment return expectations may lead to strong pressure on prices, raising concerns over inflation. If the central bank does not show concern over inflation when investment return expectations are raised, this may be interpreted as a sign that the central bank has also raised its expectations for growth potential and is thus "underwriting" market expectations.

In practice, the most difficult task in combating excessive investor optimism and the buildup of financial imbalances is to detect the excess as early as possible in a transparent way. Unfortunately, at the time of writing, conventional macroeconomic models are of little help in detecting excesses, though progress has been made in incorporating some characteristics of financial imbalances and thus in explaining their propagation mechanism. Taking account of this state of our understanding, it seems to me that significant efforts in the following two areas are needed from the practitioner's viewpoint.

Firstly, it may be desirable to develop and operationalize so-called early warning indicators, to detect signs of a buildup in financial imbalances and to rein them in as early as possible before it is costly to do so. Attempts to develop early warning indicators are sometimes criticized as *ad hoc* because of the lack of microeconomic foundations, so to speak. However, what we face are "tail risk" phenomena or more precisely, unknown unknowns, where past regularities apparently no longer hold true. In this respect, though atheoretical, the development and continuing improvement of early warning indicators is valuable in discerning factors that might be important though somewhat overlooked in conventional thinking.

[12] In the semi-annual Outlook Reports of the Bank of Japan, the Policy Board examines this possibility routinely in the second perspective of the two-perspective examination of economic conditions.

Secondly, it is important (though admittedly not easy) to have timely and persuasive market information related to the possible buildup of financial imbalances, particularly information about investor optimism. As has been shown before, the Japanese government (or more precisely, some of its divisions) was partly responsible for the excessive optimism of the late 1980s. This suggests that it is not an easy task at all to convince the market (and parts of the government) plagued by excessive optimism. Many central banks and international institutions are working to obtain first-hand broad asset market information that is as reliable and as timely as possible. Here market intelligence plays an important role in detecting signs of anomalies in these markets. In doing so, we should also duly recognize heterogeneity among regions. These are challenging tasks for emerging-economy central banks, especially with respect to property markets, which are traditionally not the main focus of central bank business, and anomalies originating in financial innovations, which often "mutate" and "disguise" themselves in subtle ways.

We usually regard financial crises as rare events, and most of the time, our model of the economy evolves around some form of economic equilibrium in a linear, though stochastically stable way. In reality however, we too often find, very painfully, that these rare events are not in fact rare, and the economy moves rather drastically from stability to instability in a short period time. The case of Japan in the late 1980s and the recent US case highlight dramatically this pattern of crisis occurrence. To contemplate best practices in macro-prudential and monetary policy, we should take proper account of our intellectual limitations in modeling the real economy, and at the same time, we should be practical in coping with the many-faceted problems of financial crises.

I will stop here for now. Thank you for your kind attention.