

The Balance Sheet Effects and Macroeconomic Development in the Pacific Region *

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Akira Kohsaka and Masahiro Enya

Introduction

Under the financial globalization, we have witnessed more frequent financial crises all over the world than before. The large-scale bankruptcies of S&L institutions in the United States in the late 1980s, the system-wide downward spiral due to die-hard NPLs (Non Performing Loans) in Japan since 1990 up to now, the cascading defaults of nonfinancial corporations, commercial banks and nonbank financial institutions after the 1997 economic crisis in East Asia, to name a few. Throughout these, asset price shocks to balance sheets have significant effects on private consumption and investment by affecting households' and firms' net worth or collateral. These balance sheet adjustments, thus, have become serious policy issues throughout the region (IMF [2002]).

Deterioration in balance sheets can be found in a variety of levels and sectors, i.e. countries, governments, banks, nonfinancial corporations and households. The deterioration in one sector can spill over to others and eventually snowball to economy-wide. It can constrain monetary policy and/or exchange rate adjustment and it can narrow a room for counter-cyclical fiscal policy.

These are actually what happened in the Pacific region in the past decades. What can we learn from these painful experiences? And how can we get better prepared for the potential future troubles? We would like to focus on how these efforts to improve balance sheets of financial as well as nonfinancial sectors constrain macroeconomic management such as monetary and fiscal policies, and how we can overcome these constraints and achieve macroeconomic stability.

We refer to experiences in advanced economies such as how we have coped with bubble bursts or asset market crash through a carefully coordinated macroeconomic and/or structural policy mix. Even low inflation becomes a headache under debt deflation in advanced as well as some emerging markets. Inflation targeting could be interpreted as a search for a new nominal anchor replacing pegged exchange rates in East Asia after the Crisis. The recovery process in East Asia looks similar across the economies, crisis-hit or not, as characterized by active fiscal management and cautious but relatively loose monetary policy.

The Asian crisis of 1997 has aroused the need for a new economic policy framework for the causes, propagation and solution of financial and currency crises. Particularly, the crisis showed that the private sector including corporate firms, households and financial institutions rather than fiscal

imbalances could be the core of a crisis. There have been more or less microeconomic problems such as inappropriate supervision and regulation of financial systems, dubious quality of lending, moral hazard due to explicit or implicit government guarantees, and fixed exchange rates leading to short-term external debt in foreign currencies. These financial structures of economies, both developed and developing, i.e. the composition and size of the assets and liabilities of financial balance sheets, have been a source of business cycles as well as booms and busts including economic crises.

This paper focuses on balance sheet adjustment processes across the recent boom-bust cycles in the Pacific region and tries to identify their stylized patterns and to draw some policy implication for the future. It pays particular attention to the interaction between balance sheet adjustments and macroeconomic variables along with structural changes in sectoral balance sheets and policy environments. To shed light on the relationships between asset price busts and macroeconomic and financial fluctuations, we compare the main empirical regularities across industrial as well as East Asian countries over the past decades.

While every asset price bust is different and depends on circumstantial factors such as the underlying shocks, the analysis shows that asset price busts and concurrent macroeconomic developments in East Asia share some common patterns with industrial economies that provide a relevant point of reference for assessing the current busts. These patterns are identified using event analysis on the basis of their timing, which does not, of course, imply causality.

As to the impact of asset market price busts and credit busts on the behavior of output, private consumption and investment, we generally observed qualitatively similar features across industrial countries and East Asian emerging market economies. Major differences between the two groups appear in the magnitudes of swings and the speed of recoveries of the key macroeconomic variables. Negative impacts on investment were stronger in East Asia, but quicker recoveries were their features, while private consumption were commonly rather robust to asset market turmoil.

The structure of the paper is as follows: Section 1 will review the process of asset price booms and busts in the case of the 1997 Asian economic crisis in emerging markets and the early 1990s in developed economies in the Pacific Region. Section 2, then, will observe the balance sheet developments of the corporate, household, financial and government sectors respectively during booms and busts through the two episodes. Because of the different stages of development we will see similar, but different responses of each sector as well as their resulting macroeconomic behaviors. Section 3 will briefly touch upon the macroeconomic policy management during the balance sheet adjustments in the 1997 Asian crisis. In Section 4, we will identify some stylized patterns of interactions between asset market price shocks and macroeconomic variables in the Pacific region, particularly focusing on East Asian emerging markets. Share price busts and

credit busts are examined with reference to developed as well as emerging economies. Based on these stylized interactions, we will discuss some interpretations on balance sheet developments and macroeconomic repercussions in the recent IT bust in 2000 in Section 5. Concluding remarks and a couple of future agenda will be given in Section 6.

1. Asset Price Busts in the Pacific Region

First, we will review the process of asset price booms and busts in the case of the 1997 Asian economic crisis in emerging markets and the early 1990s in developed economies in the Pacific Region. Within a country, asset price booms and busts are often associated with one another because one asset price boom raises wealth and then the demand for another through the wealth effect. Furthermore, thanks to the financial globalization, equity prices increasingly tend to be synchronized in movement. These days, even property prices show some international synchronization perhaps also because of increasing business cycle synchronization across countries.

Asset price busts have often accompanied economic slowdowns and financial instability. In fact, equities and real estate properties more or less constitute important shares of household assets, while they each relate to investment incentives of corporate firms through capital costs and collaterals for loans. Moreover, exchange rates are sometimes referred to an asset price whose volatility could seriously affect both public and private sector balance sheets, especially if foreign exchange exposure and/or currency mismatch is large and unhedged.

In 1997, emerging market economies in the Pacific region suffered from severe currency and financial crises. Before the Thai Bahts was under speculative currency attack, bubble-bursts in the property market had deteriorated balance sheets of the corporate and the financial sector in Thailand. Then capital flow reversals were spread rapidly over East Asia. The collapse of their virtual fixed exchange rate regimes propagated shocks through various sectors of these economies through suddenly ballooned external debt (Figure 1). In subsequent months, companies went bankrupt, individuals lost jobs, and non-performed loans ballooned in financial institutions. Relatively healthy fiscal balances turned into deficit partly because of bailouts of financial institutions and partly because of fiscal expansion to underpin domestic demand.

> Figure 1: exchange rates and external debt: Indonesia, Korea, Thailand

Their experiences clearly show how balance sheet problems in one sector can spill over into other sectors. Initial exchange rate depreciation led to the balance sheet deterioration of the unhedged corporate sector, who had difficulty in debt servicing, resulting in rising non-performing loans of financial institutions. Or, financial institutions themselves suffered directly from their unhedged exposure of foreign liabilities. To minimize these impact on their capital basis, banks curtailed their overall lending, choking off credits even to would-be solvent firms. The public sector had no choice but to debt finance the adjustment burden only to avoid a total breakdown of the

financial system and then a whole economy.

The impact of the 1997 crisis on Hong Kong can be said to be less serious than the other East Asian emerging market economies. In the case of Hong Kong, the corporate sector was not highly leveraged, the financial sector was prudent and well provisioned and the entire economy was a net international creditor with ample foreign exchange reserves. The crisis, however, hit its property market very hard (Figure 2). The property price bust was so severe that it dragged the economy into a serious deflationary spiral. A heavy reliance of the government revenue on the property market also made matters worse.

>Figure 2: Property Price Indices: Aus, HK, NZ

There is always risk of a systemic financial crisis, when distressed financial institutions affect the real economy because they are the core of the financial and the payment systems in either developed or developing economies. Indeed, in the early 1990s, developed economies experienced more or less financial distress originated from property market booms and busts. Australia, Japan, New Zealand and the United States did suffer from the distress (Figure 2).

In the early 1990s, asset market busts, turned from booms generated a few distressed financial institutions, which contagiously affected other financial institutions. This transmission mechanism appears traditional. Thanks to financial globalization, however, financial disturbances are now more likely to disseminate through a larger number of channels like the money, debt, equity, derivative and foreign exchange markets. The 1997 Asian economic crisis has taught us that it has become meaningless to determine which caused the crisis, domestic or international factors.

2. Sectoral Balance Sheet Developments

Next, we will observe the balance sheet developments of corporate, household, financial and government sectors respectively during booms and busts through the above two episodes. Because of the different stages of development in the financial system, we will see similar, but different responses of each sector as well as their resulting macroeconomic behaviors.

Corporate Sector

When the Asian crisis hit, the balance sheet of corporate sectors in Indonesia, Korea, the Philippines and Thailand were already fragile. First, because of relatively low borrowing costs from abroad then, a number of firms actively incurred foreign currency debt. Moreover, they borrowed unhedged with the (erroneous) perception of no currency risk under the virtually fixed exchange rates over the past years. Second, the corporate sector expanded their balance sheet through debt finance to a great extent along with asset market booms before the crisis. Pre-crisis debt-to-equity ratios were commonly on a historical height. Thus, high leverage together with excessive foreign exchange exposure was common features among the economies.

The crisis hit the corporate sector through both stocks and flows. As to stocks, the balance sheet effect affected their solvency by a sudden increase in liabilities. As to flows, both tight monetary policy and sharp declines in domestic demand disfavored them through high interests, credit crunch and lowering profitability. As a consequence, the larger the pre-crisis expansion, the larger the decline in private fixed investment in these economies (Figure 3).

>>Figure 3: Macroeconomic developments: Indonesia, Korea, Philippines, Thailand, 1990-2004

The balance sheet deterioration of the corporate sector was stabilized by 1999 and the indicators for corporate balance sheets such as liquidity and interest coverage ratios started to improve, reflecting regained profitability. The debt to equity ratio also declined due to favorable stock market and improved earnings.

Suspended financial intermediation led the corporate sector to pursue for an alternative financing route such as capital market and other non-bank sources as well as its own retained earnings. Although the alternative sources will not completely substitute for financial intermediation, it will without doubt help fulfill the financing gap and may lead to the development of alternative financing channels. Compared with the financial sector, however, the corporate sector in the crisis-hit economies is still exposed to currency risk because of their still large external debt.

By the time when the bubble in commercial property markets burst, levels of the corporate sector debt had soared to the historical height in the early 1990s in Australia, Japan and the United States. Likewise in post-crisis emerging markets, banks become very conservative and credit crunch occurred more or less. The corporate sector was forced to adjust through debt reduction in one way or another, cutting down private fixed investment (Figure 4).

>>Figure 4: Macroeconomic developments: Australia, Japan, NZ, United States, 1985-95

Household Sector

During the decade before the crisis, household balance sheets expanded vigorously in Indonesia, Korea, Malaysia and Thailand because of persistent macroeconomic growth and structural financial deregulation. Higher disposable income and asset price booms enable the household sector to enjoy the expansion. Households decreased saving rates and increased debt.

The balance sheet effect of the crisis on the household sector in these economies, however, was relatively small to that on the corporate sector, because households did not borrow from abroad and their exposure to asset price volatility was relatively limited despite financial deregulation. Nevertheless, the crisis brought about higher unemployment and lower disposable income in the sector, and the asset price busts affected their balance sheets negatively at least to some extent, and higher interest rates increased their debt service burden, resulting in sharp declines in household

consumption in the following years (See Figure 3 above).

In the early 1990s, households' exposure to asset price volatilities was limited relative to the later periods in developed economies. Of course, negative impacts of property price busts and resulting real economy slowdowns helped decrease private consumption through balance sheet and income effects. But, their degrees were modest in Australia and the United States (Figure 4).

Generally, the larger the assets (equity or property) relative to income, the larger their wealth effect on private consumption would be. Likewise, the larger the share of properties in assets, the larger their wealth effect on consumption. In fact, property price busts have larger wealth effects on consumption than do equity price busts. That is what happened in Japan in 1990 and Hong Kong in 1998.

Financial Sector

The typical interplay between the property and the financial sectors and the rest of the economy can be seen in the case of Thailand, i.e. the point of origin of the crisis.¹ The property boom in the mid 1990s was fueled by sustained economic growth and financial liberalization. The property sector has been heavily dependent on the borrowing from the financial sector. Furthermore, thanks to financial liberalization including the establishment of BIBF, part of the property sector could even issue bonds abroad at relatively low international interest rates. Property prices rose quickly and made the basis for the property sector to obtain new loans. In this way, banks and other financial institutions became deeply entangled with developments in the property sector.

Along with the property boom, exposures of the financial sector to the property sector snowballed in a self-fulfilling way through the collateral-base lending practice using properties. Once the euphoria evaporated, the financial sector realized massive fallout from bubble-burst and discovered their loans very, very under-provisioned. Now the financial sector found their capital base so impaired that they desperately needed massive recapitalization to maintain solvency. The above story sounds very familiar also to developed economies including Japan. One difference in the case of Thailand is that we must add the currency mismatch on top of the already disastrous situation.

Actually, whether or not the crisis originated from property price bubbles, once the reversal of foreign capital flows occurred in highly exposed, highly leveraged economies such as Indonesia, Korea, Malaysia, the Philippines, and Thailand, resulting large-scale currency depreciation realized foreign exchange risks, made debt service extremely difficult and then snowballed NPLs in the financial sector. Financial institutions tried hard to survive, collecting as much old assets as

¹ There were no evidence of property price bubbles in Indonesia, Korea, Malaysia and the Philippines at the outset of their crises.

possible and squeezing provision of new credits, while the demand for credits by itself declined because of significant slowdowns of economic activities.

Banking distress usually results from careless assessment of credit risk based on inflated asset values. In this respect, financial deregulation played a significant role in the 1980s in developed economies and in the 1990s in the developing economies. Financial deregulation created a climate of intense competition where financial institutions are inclined to expand their balance sheets rapidly. Then the usual interplay between property and credit markets realizes a self-fulfilling process of boom and bust. It occurred in Australia, Japan, New Zealand and the United States in the early 1990s. Property price busts were shown to affect the financial sector more adversely than equity price busts (IMF [2003]). Facing the increase of NPLs and deteriorating balance sheets, the financial sector restrained overall credit supplies, which in turn led to recession in the real sector.

Government Sector

Generally, before the crisis, the levels of public debt in the crisis-hit emerging economies in the region were modest relative to those in other regions. As the crisis unfolded, since the governments had to play a role of the lender of the last resort to accommodate quite an amount of losses of the financial sector, public debt started to sharply accumulate. Direct fiscal costs include the costs needed to close some financial institutions, the intervention in almost insolvent ones, the injection of public funds into viable ones and management of non-performing loans.² Furthermore, facing the abrupt slowdown of economic activities, the governments were forced to run fiscal deficits to stimulate the domestic demand, which contributed to their debt pile-up toward the end of the 1990s.³

Even without capital-account openness, China turned out to be not immune from the Asian crisis under the financial globalization trend. Once apparent ever-increasing growth slowed down, deflationary pressures put the business and financial sectors into debt overhang and NPLs-ridden respectively. With lowering interest rates, the government began fiscal expansion through bond finance and supported weak domestic demand.

3. Macroeconomic Management during Balance Sheet Adjustments

Now we will move on to the macroeconomic policy management during the balance sheet

² In addition to direct fiscal costs, we can count on contingent liabilities to be included. In the Asian crisis, governments in Indonesia and Thailand announced blanket guarantees for deposits in financial institutions to prevent from bank runs and to restore confidence of the people in the financial system. If they should be included in public debt, their figures would become enormous.

³ In fact, public debt jumped from 13% (1996) to 57% (2000) in Thailand and from 10% (1996) to 20% (2000) in Korea (Don [2005] and Huh [2005]).

adjustments in the 1997 Asian crisis.

Monetary Policy

Because of the trilemma of macroeconomic policies, the monetary authorities did have difficulties in maintaining their own monetary targets under capital mobility and controlled exchange rates such as in Indonesia, Korea, Malaysia and Thailand before the crisis. Especially in the first half of the 1990s, a huge amount of foreign capital inflows to these economies were associated with vigorous demand and output growth. As a consequence, capital account surplus outweighed current account deficit, while the latter was relatively modest because of ample domestic saving.

While the monetary authorities barely sterilized inflationary impacts of the accumulation of foreign exchange reserves, monetary tightening allured external borrowing and deteriorated further both corporate finance structures and bank portfolios. Finally, once monetary policy put an end to the boom, asset price busts occurred and capital account reversals followed, leading to a currency crisis.

With exchange rates floating or forced depreciation cascading across the crisis-hit emerging markets contagiously, the balance sheets of the corporate sector and the financial sector were significantly damaged, which in turn narrowed down the effectiveness of monetary policy or generated a new policy dilemma.

While high interest rates were expected to stabilize exchange rates, they at the same time put additional burden on non-financial firms and financial institutions. What matters here is whether the effect of higher interest rates on capital flows outweighs the cost of hopefully temporary output losses. In fact, despite higher interest rates, exchange rates kept depreciating until the end of 1997 and the depreciation kept deteriorating balance sheets of the private sector and raising the probability of bankruptcy.

One important repercussion on monetary policy in the balance-sheet-adjustment process immediately after the crisis can be found in the monetary transmission mechanism. Developing economies are generally dependent on bank finance or financial intermediation rather than the capital market with various reasons. In these bank-dependent economies, the credit channel has played a more significant role in the transmission of monetary policy. Of course, even in developed economies such as OECD countries, the credit channel has been important, but there is another important channel, i.e. the interest rate channel, in those economies. The point is, to the extent that the credit channel is important, negative impacts on the credit channel had the more serious as well as long-lasting damages on the effectiveness of monetary policy.

Fiscal Policy

Except for the Philippines, fiscal policy in the crisis-hit economies in East Asia was relatively less

constrained than monetary policy before the crisis. Government budgets were more or less in balance and the levels of government debt were relatively modest to those of the other emerging market economies in the other regions.

The crisis significantly changed the situation. The new constraints on fiscal policy came from two fronts. One is contingent liabilities arising from blanket guarantees, and the other is a sudden accumulation of public debt due to the bailouts, both for the financial sector. They constrained the room for fiscal policy when its role is most needed to boost or compensate weak domestic demand. Having said this, however, fiscal expansion without doubt helped alleviate the negative impact of the sharp downturn of domestic demand significantly in the crisis-hit and other Asian economies. The pre-crisis health of fiscal balance did enable them to do so.

Debt Restructuring

Debt restructuring became an indispensable precondition for restoring both the corporate and the financial sectors. Without reconstructing the balance sheets of these sectors, monetary policy transmission would not work out, hence macroeconomic management would not either. Disposition of the assets of closed financial institutions, facilitation of debt restructuring negotiation in the private sector and management of transfer of NPLs from financial institutions and asset management agencies helped reducing the NPL ratios.

The speed and scope of establishing the central asset resolution agencies for commercial banks were varied across the crisis-hit economies, relatively quick in Korea and Malaysia, but slow in Thailand. In Thailand, the government initially preferred a decentralized market-driven approach to NPL resolution, which retarded significantly the pace of financial restructuring. Note, however, that, while the improvement of the balance sheets of both the corporate and the financial sectors were necessary for bank credits and corporate investment to resume, they are not sufficient conditions for the economic recovery. Full-fledged recovery needs to resolute the prior over-investment and its resulting excess capacities.

Alternative Macroeconomic Policy Framework

Once we recognize the trilemma of macroeconomic policies, some nominal anchor must be chosen for macroeconomic stabilization as far as we allow for capital mobility in a small open economy. One such alternative to a fixed exchange rate regime is the inflation targeting, which has been adopted in Thailand since 2000.

Not only as pursuit for a nominal anchor, the inflation targeting has recently become an important macroeconomic policy framework because low and stable inflation in itself can be desirable and indispensable for financial stability. One reason is that unexpected inflation arbitrarily redistributes wealth between debtors and creditors, resulting in ex post resource misallocation and potential social wastes.

Based on the empirical fact that higher inflation is associated with higher volatility in inflation, inflation targeting is supposed to establish the credibility of monetary policy with forward-looking agents. So far, there is some evidence that shows convergence between ex ante and ex post inflation and actual inflation has appeared to be maintained within the predetermined narrow bands. Note here, we will touch upon later that, considering balance sheet effects seriously, we may need a broader perspective for macroeconomic management than inflation targeting

4. Asset Market Busts and Macroeconomic Developments

In this section, we would like to characterize the pattern of interaction between asset market price shocks and macroeconomic variables in the Pacific region, particularly focusing on East Asian emerging markets. Since equities and properties constitute a more or less significant part of households' wealth and firms' assets, their price changes affect decisions on consumption and investment, thereby domestic absorption and aggregate output. First, we discuss the impact of equity (share) price busts. Then, we discuss the impact of credit busts instead of property price busts, because property price indices for East Asia were not easily available at hand to the authors and credit and property price busts often coincided with each other.

Share Price Busts

Share price indices from IMF, International Financial Statistics are used for Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand for the period of 1975 (the earliest) to 2004 (deflated by the CPI). As in the approach taken in IMF (2003), we first identify peaks and troughs in share prices, and then define a bust as a peak-to-trough decline where the price change fell into the top quartile of all declines during bear markets. Using this methodology, we found 10 share price busts in the 7 economies between 1975 and 2004 (Table 1). 7 busts out of 10 were in the 1990s.

>Table 1: Share Price Busts: East Asia

We move on, next, to the interaction between share price busts and macroeconomic and financial developments in these economies for the period. The behavior of key macroeconomic and financial variables before and during a share price bust is compared.⁴ Figure 5 shows the behavior of these variables three years before and after a peak in share prices that was followed by a bust. Panels in the Figure include the median and the bottom and top quartiles.

>>Figure 5: Share price busts around here

⁴ Bordo and Jeanne (2002).

Hereafter, we compare this with the parallel figures for 19 industrial countries between 1960 to 2002 displayed in IMF (2003, Figure 2.3 and 2.4), which is summarized in Appendix Figure 1. Figure 5 suggests that share price busts were associated with substantial output losses, where the output growth two years after a share price bust declined by 5 percent from the average growth rate of 7 percent during the three years up to the bust. This is qualitatively similar to the industrial countries' case, while their slowdown was only 2 percent from 4 percent.

In terms of timing, the output slowdown after a share price bust began almost one year after the bust, and the recovery started two years after the bust. This is almost the same with the industrial countries, while their recovery was less significant than East Asia. That is, the pattern of the output growth during a share price bust is similar in both industrial countries and East Asia, but its swing is larger in the latter.

The difference in the strength of the output effects of a share price bust reflected differences in the behavior of components of domestic absorption. Real private consumption remained relatively unaffected in East Asia as opposed to a significant decline in industrial countries. It may suggest, at least partly, the limited role of equity holding in households' wealth in East Asia. Real investment experienced a large and sharp fall in both groups, but its magnitude was far larger in East Asia, i.e. -15 percent fall of the investment growth as compared to less than -5 percent. With regard to their timing, private consumption started recovery only one year after the bust, but investment needed two years to recover in East Asia. In contrast, both private consumption and investment began to fall one year after the bust and to recover two years after the bust in industrial countries.

The behavior of components of domestic absorption and output reflected the impact of the fall in a share price on the balance sheets of firms and households, which in turn affected their savings and investment decisions through various channels. Real private credit growth declined after a bust. This reflected both lower demand and reduced supply. The decline in credit coincided with the bust, while its recovery lagged that in output. Namely, during the initial stages of an output recovery, the role of credit was limited in the recovery of investment. With respect to the credit behavior, we see no difference between East Asia and industrial countries.

The behavior of short-term real interest rates after a bust showed a significant difference between East Asia and industrial countries. In the case of industrial countries, the interest rates fell after the bust, reflecting output decline and monetary easing. In contrast, in the case of East Asia, short-term rates increased prior to the bust and remained high and stable thereafter, reflecting monetary tightening. This behavior of the interest rates is almost equivalent to that in the case of household price busts in industrial countries (IMF (2003, Figure 2.4)).

Credit Busts

Now we examine credit boom-busts in the 7 economies in East Asia during the period from 1960 (the earliest) to 2004. Claims on the nonfinancial private sector are taken from IMF, International Financial Statistics as credits (deflated by CPI). Drawing on the methodology adopted by IMF (2004), a credit boom in a given economy is identified if it exceeds the standard deviation of that economy's credit fluctuations around trend by a factor of 1.75. The trend is estimated here using the Hodrick-Prescott filter. IMF (2004) covers 28 emerging market economies during the period from 1970 to 2002, which include the 7 economies in East Asia focused here. They found 18 credit boom-busts for 17 economies, where 4, 7 and 7 busts were for the 1970s, 1980s and 1990s, respectively. We found 8 credit boom-busts for 7 economies, out of which 6 busts were concentrated on the years of 1997 and 1998 (Table 2).⁵

>Table 2: Credit Busts: East Asia

To characterize how credit boom-busts were associated with key macroeconomic and financial variables in East Asia, we examine now the behavior of these variables in a seven-year window centered around the time of the peak of the boom and compare the outcome with that of IMF (2004). Figure 6 is for 7 emerging economies in East Asia, which is comparable to Appendix Figure 2 of IMF (2004, Figure 4.5). The thick line represents the median, while the light lines indicate the upper and the lower quartiles.

>>Figure 6: Credit Busts, East Asia around here

Our findings are as follows. On average, credit booms were associated with a cyclical upturn, followed by a downturn, in output and domestic absorption in 28 emerging market economies. The magnitude of cyclical movements was, however, far limited in East Asia. The magnitudes of negative deviation from trend in output and private consumption are significantly smaller in East Asia than in the other emerging markets, while that of investment was comparable each other between the two groups. Furthermore, both output and domestic absorption began to recover only two years after the credit bust in the former, while they remain sub-trend even three years after the bust in the latter. Somewhat interestingly, it is to be noted that both output and domestic absorption appeared to precede the credit bust by one year in East Asia.

For comparison purposes, we also apply the same approach to 19 industrial countries over the period from 1970 to 2004 (Figure 7). We found 15 boom-busts, and 9 out of 15 busts were concentrated on the years of 1989-93 (Table 3).

>Table 3: Credit Busts: Developed Countries

⁵ These are slightly different from those identified in IMF (2004), probably because of different period coverage. Sensitivity analyses (not reported here) suggest the difference does not affect our main findings in any significant way.

>>**Figure 7: Credit busts, industrial countries around here**

Somewhat surprisingly, their behaviors of output, private consumption and investment were found to be qualitatively similar to those of East Asia in the sense that their downturns were relatively limited and their recoveries were quick, particularly for output and private consumption, as compared to general patterns in the case of the 28 emerging market economies. In terms of timing, in contrast with East Asia, the shift of these variables from upturn to trend coincided with the credit bust, though. The duration of being under-trend of these variables was about two years as comparable to the case of East Asia. Finally, real short-term interest rates were rising before the bust and kept high for 1 to 2 years after the bust, which were also similar to the case of East Asia, reflecting persistent monetary tightening even well after the credit bust for both groups in common.

Summing Up

As to the impact of asset market price busts and credit busts on the behavior of output, private consumption and investment, we generally observed qualitatively similar features between industrial countries and East Asian emerging market economies. Major differences between the two groups appear in the magnitudes of swings and the speed of recoveries of the key macroeconomic variables. Negative impacts on investment were stronger in East Asia, but quicker recoveries were their features, while private consumption were commonly rather robust to asset market turmoil.

It is pointed out that bank-based economies are more vulnerable than market-based economies to asset market price busts generally and to property price busts in particular, and that property price busts tend to affect key macroeconomic variables more seriously than share price busts (IMF (2003)). If these hold true, emerging market economies in East Asia are relatively vulnerable because they are bank-based. In fact, however, we found in this section rather flexible adjustment performance there as compared to industrial countries as well as other emerging market economies, at least so far. A part of the reason could be that the presence of asset markets was not so significant in East Asia as compared to industrial countries, of course. Then, if their presence becomes more prevalent, what would happen and what can we advice against the asset market-macroeconomic variable nexus? This is the point to consider in next sections.

5. Recent Balance Sheet Developments and the 2000 IT Bust

Restructuring after the 1997 Asian crisis is not completed yet. Nonetheless, initial adjustments appeared to be over by the end of 1999 (Korea, Malaysia and Thailand) and a bit later in Indonesia. In this section, we will trace the balance sheet developments after the initial adjustments, namely in the post crisis period.

The crisis brought about significant changes in banks' balance sheets in the crisis-hit economies.

On the sources of funds, they reduced the share of foreign currency debt, particularly of the short-term, which contributed to lengthen the maturity structure of the liabilities. On the uses of funds, they cut credits to the private sector significantly, substituting for foreign assets and government securities (flight to the quality).

Owing to the overall restructuring efforts, the financial systems in the crisis-hit economies are regaining their health as they used to be, by showing more than adequately provisioned for potential bankruptcy risks. NPL ratios also show the steady trend of improvements, though not completed yet. Around 2000, the financial sector began to expand the share of lending to the household sector, not only for housing, but for general loans, reflecting both demand and supply factors and financial deregulation (Korea, Malaysia, and Thailand).

The balance sheet deterioration of the corporate sector was stabilized by 1999 and the indicators for corporate balance sheets such as liquidity and interest coverage ratios started to improve, reflecting regained profitability. The debt to equity ratio also declined due to favorable stock market and improved earnings.

Suspended financial intermediation led the corporate sector to pursue for an alternative financing route such as capital market and other non-bank sources (Korea and Thailand). Although the alternative sources will not completely substitute for financial intermediation, it will without doubt help fulfill the financing gap and may lead to the development of alternative financing. In contrast with the financial sector, however, the corporate sector in the crisis-hit economies is still exposed to currency risk because of their still large external debt.

The household sector was the first sector to recover from the crisis and has been the main driver of the recovery in the crisis-hit economies. It has expanded its balance sheet, particularly by increasing debt. Indeed the household debt has increased, even relative to disposable income.⁶ This new trend can be explained by increased income and consumer confidence, low interest rates, the shift of loan priority of the financial sector, and financial deregulation policies. Looking at the Korea's consumer debt problem in 2003, some regulatory measures will be required for the stability of the financial system.

Along with the trend of financial deregulation, we have witnessed some structural changes in debt structures of the corporate and the household sectors throughout the Pacific region. First, the corporate sector has relied more on internal funds and market-based external finance than on loans. Second, the household sector has increased debt, mainly for housing investment, in its balance sheet. Parallel to this, financial institutions have shifted their provisions of credits from the

⁶ Households' debt to asset ratios rose from 10, 15, 15% (1990) to 16, 22, 19% (2003) in Australia, New Zealand, and United States, respectively.

corporate to the household sector.⁷

In the case of Australia, lending to the corporate sector has become less than half of the total credit by financial institutions with the rest for households. The corporate sector has been profitable and its levels of debt and debt service have been maintained low. In contrast, the household sector has increased its ratio of debt to disposable income to a significant degree, partly reflecting sustained increases in residential property prices. It seems that a potential credit risk also has shifted from the corporate to the household sector and that the financial sector should be ready to cope with the risk.

The reliance on bank lending of the corporate sector has kept declining throughout the 1990s also in the United States. The corporate sector expanded its balance sheet and leverage more and more through the capital market. This will lead us to the next stage of balance sheet effects when we face the 2000 IT bust.

In 2000, when the IT bubbles burst, another round of boom and bust cycles had been expected in the United States and other developed economies. Although the recent busts in equity price indices were similar to earlier episodes in terms of the magnitudes, the lengths, and the cross-country synchronization of the price declines, IMF [2003] suggests that macroeconomic and financial developments differ from the past experiences in the OECD economies, specifically with respect to the following three points. First, the decline in output growth began earlier and larger than before, reflecting sharper falls in fixed investment. Second, the growth of private consumption was stronger than before, reflecting robust housing prices. Third, short-term real interest rates declined faster and by larger amount in the United States than before.

In the case of the Pacific region, we can see visible synchronized slowdowns in equity price and private investment in Hong Kong, Japan, Malaysia, and Singapore and slight negative impacts in Australia, Korea, New Zealand, and the Philippines. Although equity prices showed some setback, we saw modest negative real impacts on private investment in China, Indonesia and Thailand (Figures 3 and 8).

>>Figure 8. Macroeconomic developments: Australia, Japan, New Zealand, United States, 1990-2004

In terms of the interplay between asset market and macroeconomic developments, the 2000 IT bubble burst appears to share some common features with our previous episodes of asset market busts in the 1990s. First, debt accumulation and debt restructuring in the corporate sector played a major role. Second, increasing NPLs and bond defaults shook the confidence on the overall

⁷ The share of household loans in total loans increased from 10 and 22% in 1993 to 50 and 35% in 2003, respectively, in Korea and Hong Kong.

financial system, affecting the real economy.

There are differences, however, reflecting structural changes in the financial system observed during the 1990s. These differences could have important implications for macroeconomic management for the future.

First, in the IT bubble-burst, equity and other financial asset prices played the central role, reflecting larger reliance of the corporate sector on the capital market rather than the financial sector. In fact, the magnitude and the coverage of equity price adjustments were unprecedented especially in the United States. Property prices, however, were not that much affected. Negative wealth effects on the household sector were limited to that of equity price busts.

Second, the impact of the IT bust influenced on balance sheets of a wider range of sectors, because financial liberalization and development have enabled a variety of market participants to expand their exposure to market-based financial assets and liabilities. In other words, in contrast to the early 1990s, risks were not solely concentrated on the financial sector. Rather, confidence issues are now shifted to the financial and capital market as a whole.

As a result, third, the damage made on the balance sheet of the financial sector were limited relative to the early 1990s so that resulting credit crunch as well as its effect on the real sector was limited as well. Resulting real economic slowdowns, especially in private investment, did not come from credit crunch by the financial sector like in the early 1990s, when banks tried to minimize capital consumption through preemptive credit squeeze. Rather, in the IT bust, banks remained profitable and robust.

6. Policy Implication for the Future

Now we can answer why, particularly in the United States, the negative impact of the IT bubble burst on the real economy as well as the financial system appeared limited so far, while its magnitude was large enough. Although one may say that the adjustment is not over yet, we can think of at least the following four factors which did contribute a soft landing of the Pacific economies despite the bust.

First, there were no property price busts, particularly residential ones, so that the negative impact of equity price bust on the household sector was limited. Admitting some tautology, the confidence of the household sector depends on overall macroeconomic stability, including robust employment and steady disposable income. In this sense, timely policy actions to maintain confidence has become more important.

Second, after the previous crisis or near-crisis episodes, the financial sector has been restructured

and disciplined, and has become off the center stage as far as IT-related corporate expansions were concerned. Accordingly, there was little room for the potential financial instability. We have observed a layer of improved regulatory rules, systems and organizations throughout the Pacific region.

Third, the securitization trend of the corporate finance diversified its risks over a wide range of investors including not only financial institutions, but also households, institutional investors and foreigners. In contrast, in the early 1990s, corporate risk was ultimately taken almost solely by the financial sector, particularly in Japan.

Finally, quick and resolute monetary policy and other policies did help maintain the confidence of the private sector on the financial system as well as policy management. In the past records, there seems some asymmetry in monetary policies toward either equity price bust or property price bust. While we observe easy money in the former, but tight on in the latter, which in turn produced serious deflationary situations. Similar deflationary impacts were found in the case of the 1997 crisis. Then decisive monetary tightening to defend currency values turned out to be a disaster. How to cope with asset price inflation is not yet known.

As we have observed the recent couple of boom-bust cycles and their implication for macroeconomic policy management, in addition to the usual set of lessons,⁸ we would like to raise two issues, which are two mutually entangled issues to be pursued further:

First, due to improved access to the capital market and to accumulating wealth, we must put a more serious thought to debt management in the household sector. There is still a non-negligible risk of property market bust in any country. How to cope with the risk and its impact on the financial system as well as the real sector will be a challenging task. Second, having concerned with asset price volatilities and their potentially significant impacts on a macroeconomy, whether inflation targeting is enough or not for macroeconomic stability will be another challenge. Why should the stability of product prices come prior to that of asset prices?

⁸ They are: 1. Improving prudential regulation and strengthening supervision of the financial sector remain the core of macroeconomic structural policy. Even under the trend of securitization, the stability of the financial system cannot be achieved without the robust financial sector. 2. Improving scrutiny of corporate finance and strengthening (developing) capital market is indispensable. Over-expansion of corporate balance sheets will be the origin of booms and busts, which may not be contained even in the future. Systematic check and balance must be institutionalized either through rule-making or market disciplines. 3. Sometimes quick and resolute management of macroeconomic policies is necessary for macroeconomic stability. Problems here are, however, that there is no consensus prescription against both the prevention and the cure of asset price booms and busts.

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Table 1. Share Price Busts: East Asia, 1975-2004

Country	Peaks	Peak-to-Trough Decline
Indonesia	1997Q 1	1.281
Korea	1989Q 1	0.835
Korea	1994Q 4	1.400
Malaysia	1983Q 3	0.794
Malaysia	1997Q 1	1.239
Philippines	1979Q 1	2.088
Philippines	1996Q 1	1.230
Philippines	1999Q 4	0.955
Singapore	1996Q 1	0.826
Thailand	1995Q 2	2.018

Note: Share price busts: peak-to-trough declines where their price changes falls into the top quartile of all declines.

Table 2. Credit Busts: East Asia, 1960-2004

Country	Credit Busts	Period
Hong Kong	1998	1991-2004
Indonesia	1997	1981-2004
Korea	2003	1965-2004
Malaysia	1997	1960-2004
Philippines	1983, 1998	1960-2004
Singapore	1998	1964-2004
Thailand	1997	1960-2004

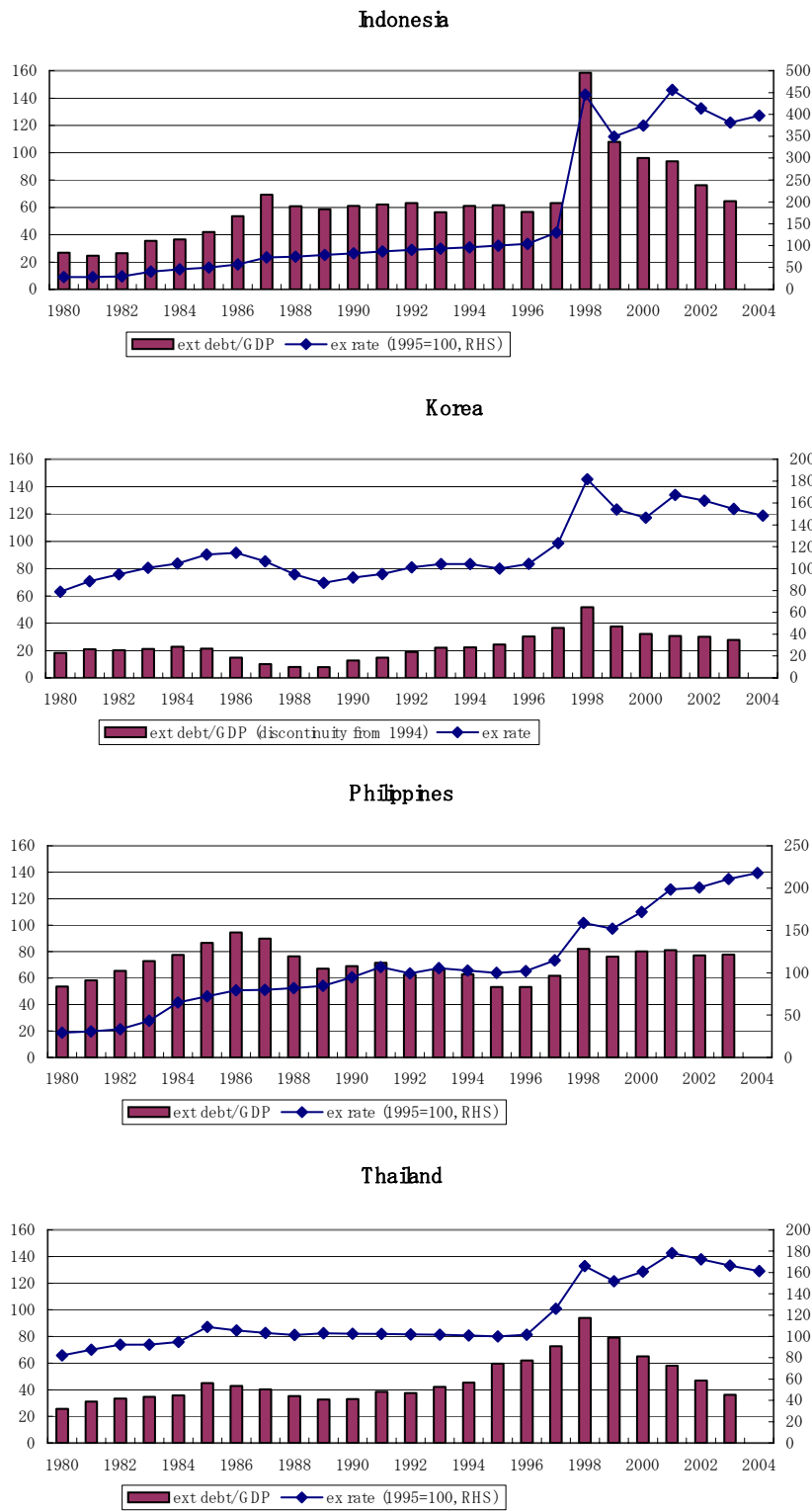
Note: Credit busts are identified when they exceed the standard deviation of credit fluctuations around the trend by a factor of 1.75.

Table 3. Credit Busts: Developed Countries, 1970-2004

Country	Credit Busts	Period Covered
Austria	1991	1970-97
Belgium	1993	1970-98
Canada	1979	1970-2004
Denmark	2001	1970-2004
Finland	1991	1970-98
France	1979	1970-97
Germany		1970-98
Ireland		1970-98
Italy	1992	1970-98
Japan		1971-2002
Netherlands	1986	1970-97
Norway	1976	1970-2003
Spain		1970-98
Sweden	1991	1970-99
Switzerland	1990	1970-2004
UK	1989	1970-2004
Australia	1990	1970-2004
New Zealand	1989	1970-2004
US	1999	1970-2004

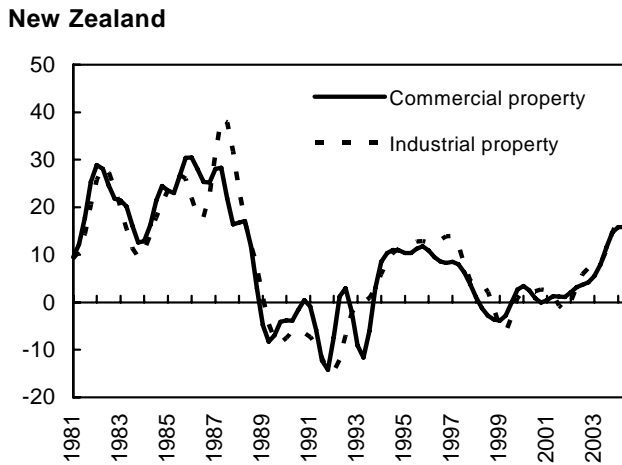
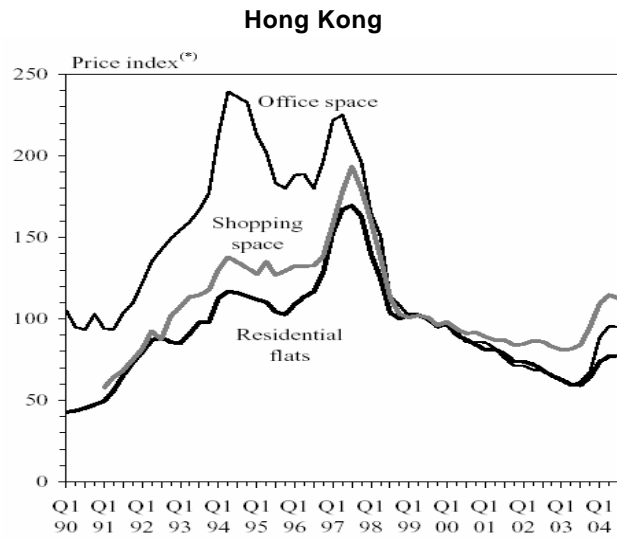
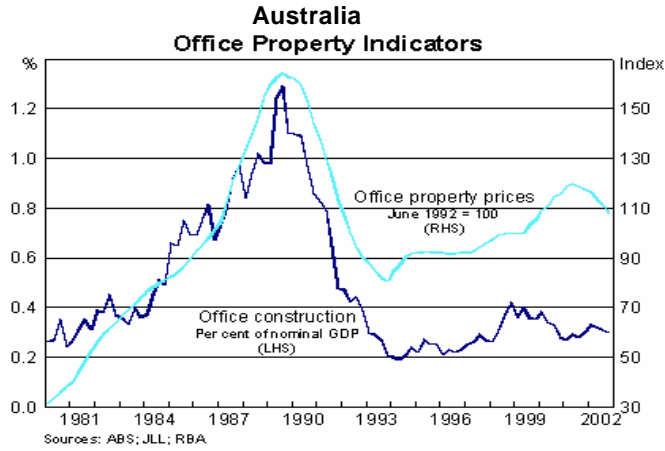
Note: Credit busts are identified when they exceed the standard deviation of credit fluctuations around the trend by a factor of 1.75.

Figure 1. Exchange Rates and External Debt: East Asia



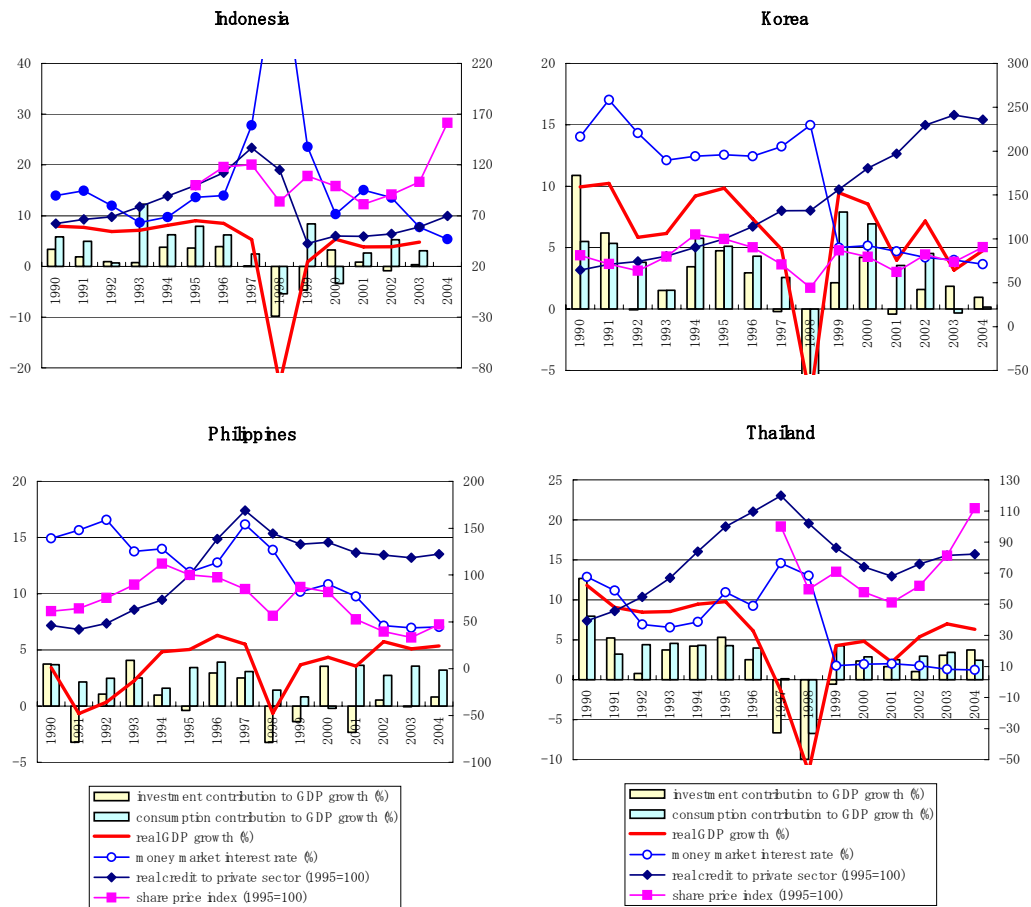
Source: IMF, *International Financial Statistics*, CD-ROM.

Figure 2. Property price indices: Selected Countries



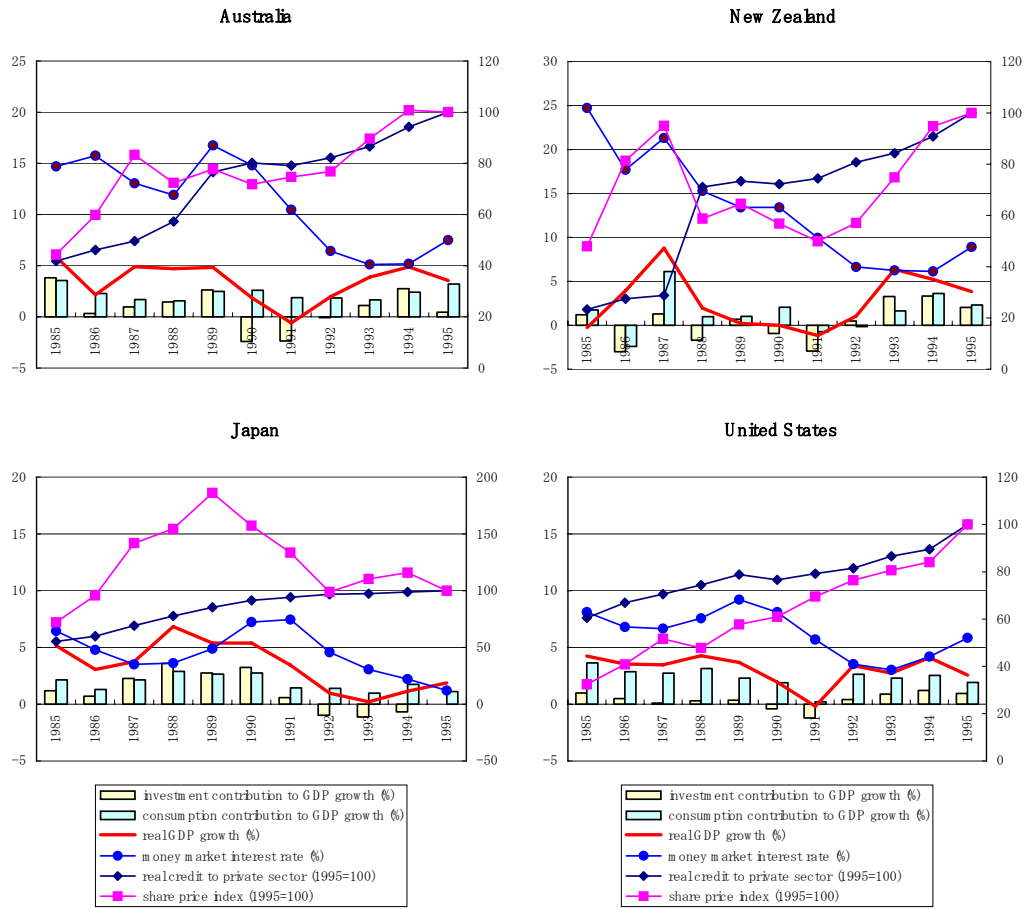
Source: Makin [2005], Tang [2005], and Walton [2005]

Figure 3. Macroeconomic Developments: East Asia, 1990-2004



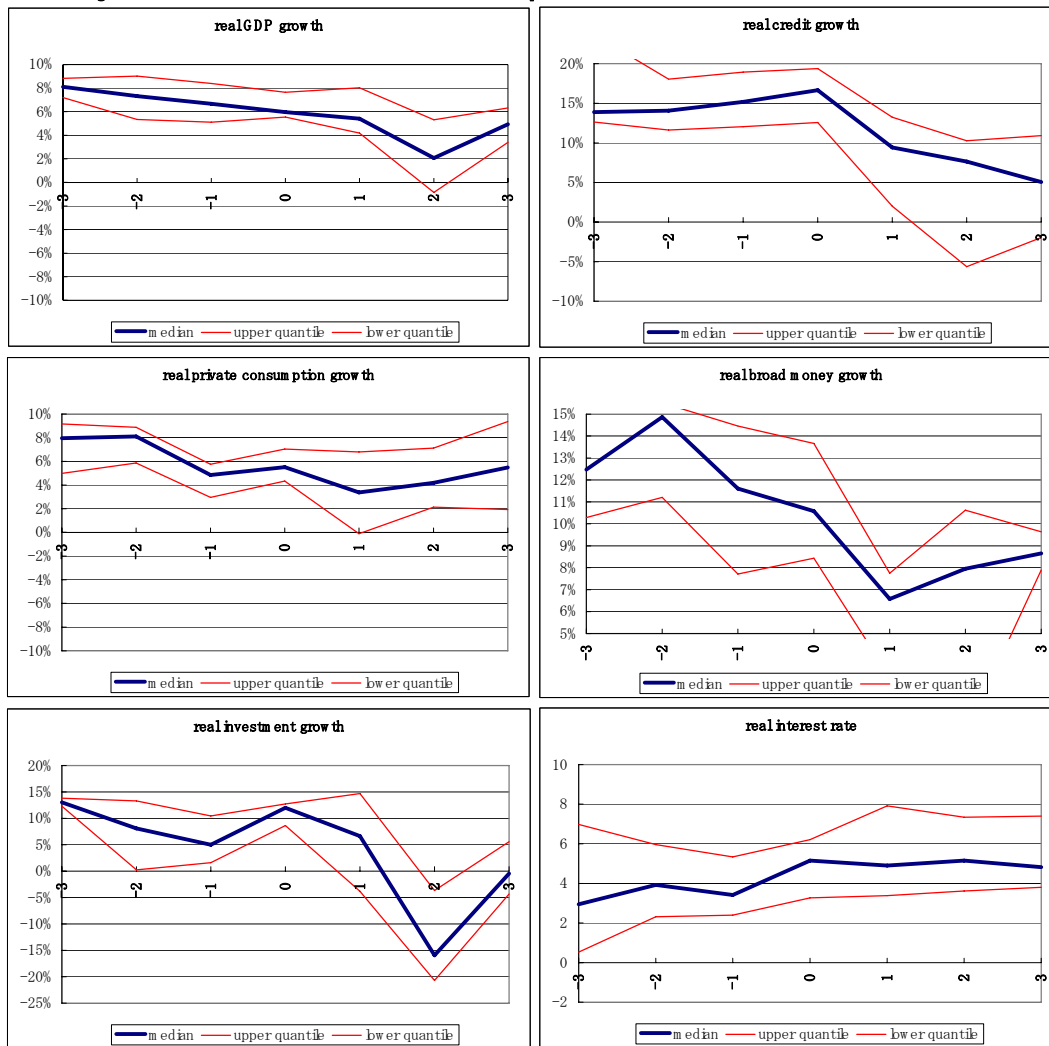
Source: IMF, *International Financial Statistics*, CD-ROM.

Figure 4. Macroeconomic Developments: Developed Economies, 1985-1995.



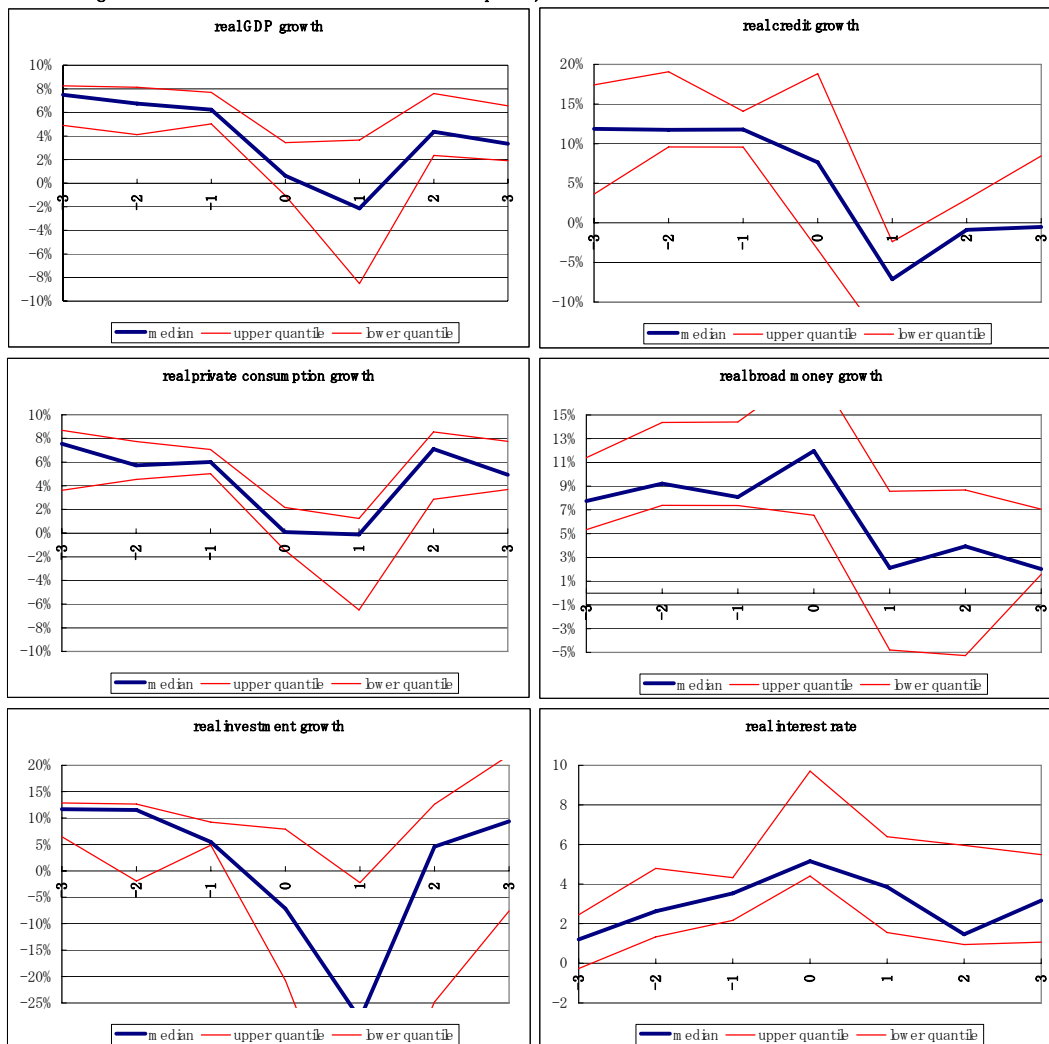
Source: IMF, *International Financial Statistics*, CD-ROM.

Figure 5. Share Price Busts and Macroeconomic Development: East Asia



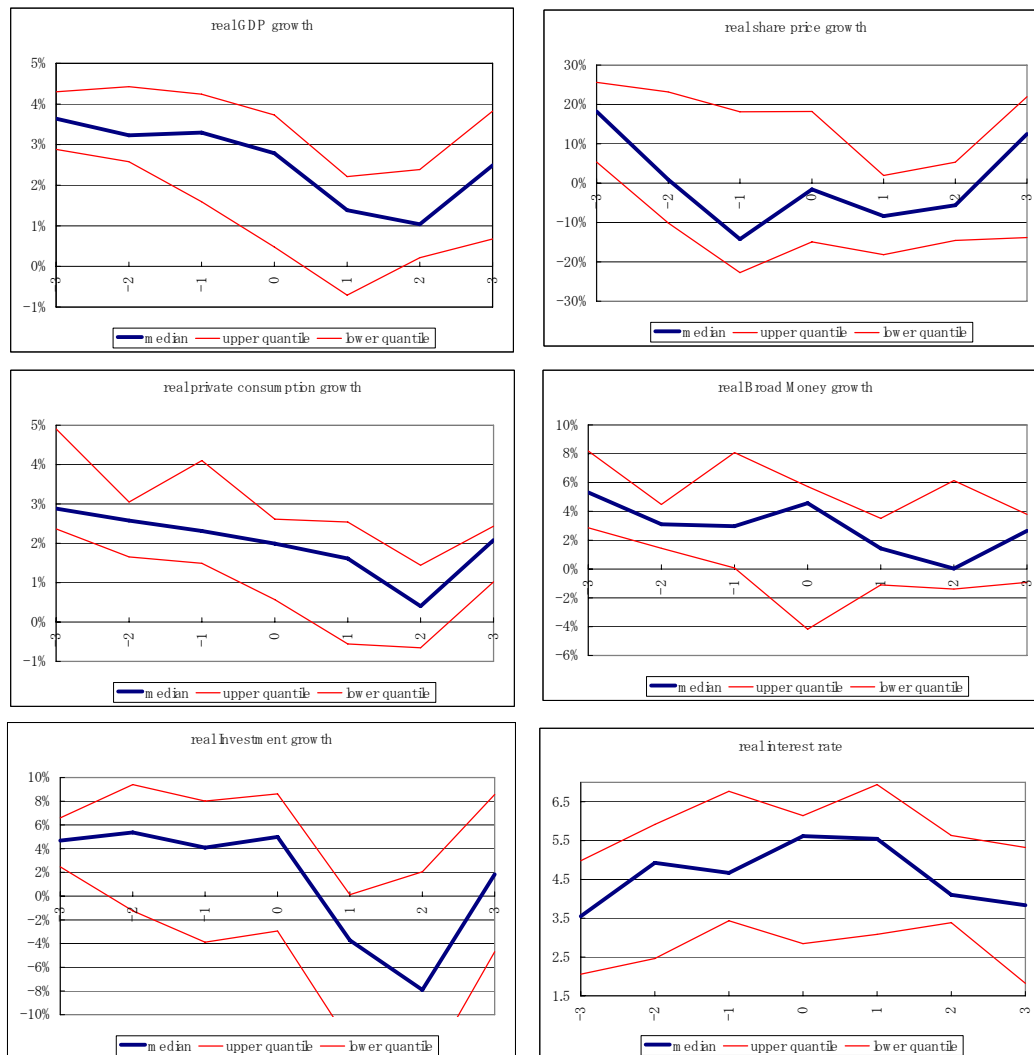
Source: Authors' calculation.

Figure 6. Credit Busts and Macroeconomic Development, East Asia



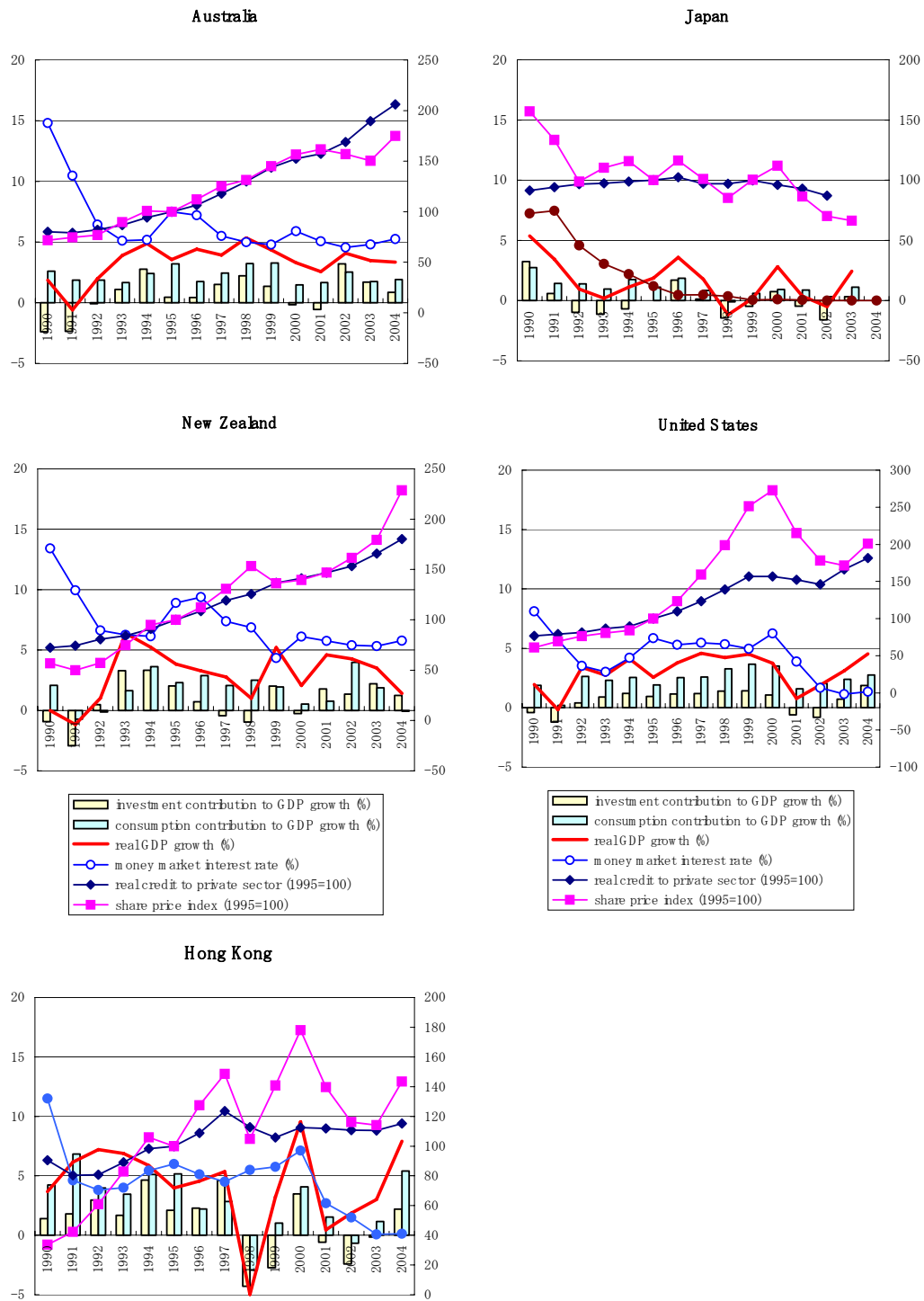
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Figure 7. Credit Busts and Macroeconomic Development, Industrial Countries



Source: Authors' calculation.

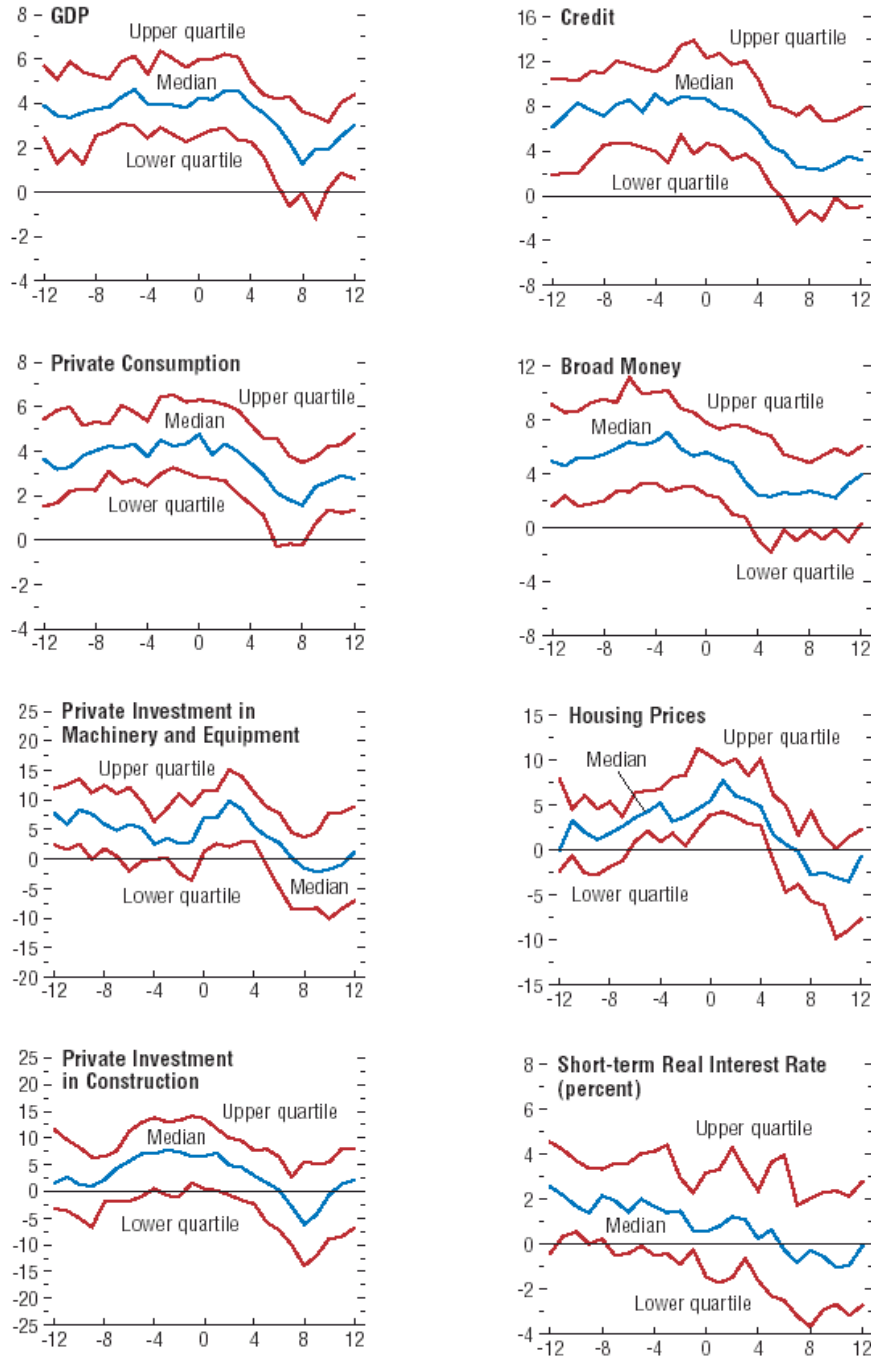
Figure 8. Macroeconomic Developments: Developed Economies, 1990-2004



Source: IMF, *International Financial Statistics*, CD-ROM.

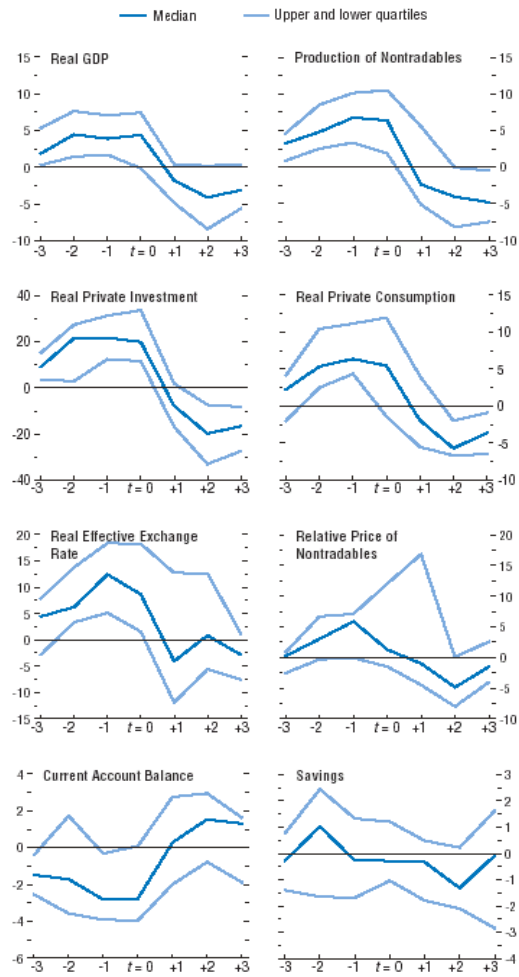
Appendix

Figure 1. Equity Price Busts and Macroeconomic Developments in Industrial Countries



Source: IMF (2003).

Figure 2. Credit Busts and Macroeconomic Developments in Emerging Markets



Source: IMF (2004)