

Non-Exchange Rate Adjustments in the Asian Crisis: The People's Republic of China and Hong Kong

Y. F. Luk*

Most Asian economies had their currencies depreciated vis-a-vis the U.S. dollar during the recent financial crisis. The People's Republic of China and Hong Kong, however, tried hard to maintain the exchange value of the renminbi and the Hong Kong dollar. As a result, their experience and adjustments in the crisis were quite different from their neighbours. This paper discusses the main experience and policy responses in the two economies. While other Asian economies suffered the consequences of financial fragility, the Chinese financial system is still very much closed and has a lot to learn from others in the crisis. On the other hand, Hong Kong demonstrates how a liberal and well managed financial system could be subjected to major financial shocks, especially with incorrect policy responses. (JEL Classifications: E50, O53)

I. Introduction

The Asian financial and economic crisis swept through the region with both strength and speed. In a matter of months, what was previously considered as an economic miracle has turned into widespread economic turmoil. East Asia, which had successfully mastered amazing economic growth in the past few decades and was believed to be a major economic force as the world marches onto the next century, is now seriously ill. The reason that such a drastic turn-around took place is particularly intriguing, and what is equally unsettling is the situation could further deteriorate.

*School of Economics and Finance, The University of Hong Kong, Pokfulam, Hong Kong.

Given its scope and depth, the economies directly struck by the crisis went through it in various ways, with different exposures, subsequent adjustments and paths of recovery. This paper recounts the experience of the People's Republic of China (PRC) and Hong Kong¹ in the Asian crisis.

In comparison with other major economies which have been hardly hit by the Asian crisis, a prominent feature of the PRC and Hong Kong during the crisis is that the currencies of both economies have maintained stable values vis-a-vis the U.S. dollar (USD). On the other hand, during the period 1 July 1997 to 1 July 1998, the Thai baht depreciated by 72.3 percent and the Indonesian rupiah by 492.2 percent with respect to the USD. For the same period, the Malaysian ringgit, the Korean won, Singapore dollar and New Taiwan Dollar depreciated by 63.4 percent, 54.3 percent, 18.3 percent, and 23.6 percent respectively.² The Japanese yen, which has much more global implications and was the focus of international finance during the crisis in mid-1998, had also gone down in value by 20.6 percent in the same 12 months, despite its rebound later in the fall. For these economies, exchange rate depreciation was both the symptom and a mechanism of adjustment to the crisis. However, for both PRC and Hong Kong economies, since their currency values have not changed, the way the crisis unfolded and the necessary adjustments in the economy were quite different from their Asian neighbours.

Nevertheless, maintaining stable exchange rates with respect to the USD is probably the only similarity of the experience of the PRC and Hong Kong during the crisis. There are, in fact, major differences in their economic structure and degree of openness, and hence they experience different impacts of the crisis, and have to tackle different issues in their recovery.

The PRC economy is still under transition from planning to market, despite some twenty years of economic reform. It is relatively closed with regard to capital flows, even though it has become a major trading partner after opening up. Its currency, the

¹Since 1 July 1997, the People's Republic of China has resumed sovereignty over the previous British colony of Hong Kong, which has come to be known as the Hong Kong Special Administrative Region (SAR) of the People's Republic of China. To avoid confusion, in this paper the People's Republic of China refers to the Chinese Mainland, excluding Hong Kong.

²Figures from IMF, *International Financial Statistics*.

renminbi (RMB), is nonconvertible in the capital account. Modern monetary policy is still in an infancy stage and the control of credit has been mostly relying on administrative rather than economic means. The financial system has lagged behind other sectors in terms of the pace and extent of reform. It is still dominated by state-owned banks with large volumes of bad loan exposure to loss-making state-owned enterprises (SOEs). The Asian crisis took place at a time when the PRC economy had succeeded in coming to a soft-landing in the curbing of inflation, which, however, was accompanied by slowdown in the growth rate. It was also the time when the PRC was more determined to carry out long-overdue large-scale reforms in state-owned enterprises and the financial system, and had made repeated efforts to become a member of the World Trade Organization.

The economy of Hong Kong, on the other hand, is well known to be open, flexible, and market-oriented. It has been regarded as an international financial center (IFC) and services base in the region. Its currency has been linked to the USD since 1983 under an arrangement similar to that of a currency board. The Asian crisis occurred when the economy had experienced moderate asset price inflation for a few years. It was also the time shortly after the return of sovereignty of Hong Kong from the British to the PRC. The political change had been considered by observers to add uncertainty to the future development of Hong Kong.

Given the marked differences between the PRC and Hong Kong economies, this paper discusses their experience and adjustments separately, despite the fact that the Hong Kong economy is getting ever closer to that of the PRC.

II. Experience and Adjustment in the PRC

Economic reform in the PRC was officially proclaimed in late 1978. In the ensuing two decades, the PRC economy has attained an admirable average annual real growth rate of nearly 10 percent.³ On this count alone, economic reform in the PRC has been highly successful. Yet, high economic growth in these years was con-

³This is based on official figures. The World Bank, using alternative GDP deflators, slashes 1.2 percentage points off the official measures. (World Bank 1997a)

sistently punctuated by sharp fluctuations, and there have been three prominent episodes of business cycles. Although business cycles are common phenomena and become more explicit as economies get more market-oriented, one particular feature of these cycles in the PRC is the lack of effective macroeconomic policies for stabilization.

Except maybe for government spending, especially on infrastructure, fiscal policy in the PRC has yet to become an effective policy tool to control aggregate demand. This is particularly the case on the revenue side. As the central government plays an increasingly smaller role in economic activities, the devolution of decision-making power to enterprises and local governments, together with a backward legal and auditing system, means the existence of numerous loopholes for tax evasion.

On the other hand, monetary policy is not effective either. As the banking system is dominated by state banks, and the larger share of bank loans go to SOEs which are not sensitive to that interest rate, the usual channel of monetary policy through interest rates does not work. In fact, the PRC government has been relying on administering credit quota to limit bank credit, and during boom times banks used to disregard the quota, rendering the control ineffective. Moreover, the mechanism to conduct monetary policy is only at the early stage of development. Open market operation is still a new policy tool, and the People's Bank of China has yet to fine-tune its practice of such tool to bring about a stable monetary environment for the economy.

The most recent economic boom took place in the period 1992 to 1994 when real GDP growth rates were 14.2, 13.5, and 11.8 percent respectively in those three years. The economy was so overheated that the nationwide inflation rate for consumer prices reached 21.7 percent in 1994, the highest in the history of the PRC.⁴ The situation called for tight macroeconomic control and the then vice-premier Zhu Rongji was in charge. Bank credit was greatly tightened, though mostly by administrative means, and inflation was successfully tamed. The year-on-year growth rates of M1 and M2 stood at 32.5 and 37.1 percent respectively in 1994Q3.

⁴Except otherwise stated, economic figures for the PRC all came from various issues of the *China Statistical Yearbook*, *China Economic News*, and *China's Latest Economic Statistics*.

They have come down all the way to 8.7 and 14.6 percent by 1998Q2. Consumer price inflation returned to single digit levels in 1996. Towards the end of 1997 and throughout the early months of 1998, it was less than 1 percent. It actually turned negative in the later months of 1998. However, the tight macroeconomic control has also brought about a slowdown in economic growth. Real GDP growth rate was 8.8 percent in 1997, lower than the average 10 percent in the past two decades. It was targeted at 8 percent for 1998, but performance in the first three quarters of 1998 fell short of this target, standing at slightly above 7 percent only.

The exchange rate regime of the PRC is worth noting. Before 1994, there were basically three foreign exchange (FX) markets with different USD value of the RMB: the official market in which the RMB was artificially overvalued, the black market, and the swap market. The swap market was for exporting enterprises and government departments to sell FX quotas to those who needed to purchase FX for imports. The value of the RMB in this market was lower than the official value, and reflected more the equilibrium price of the RMB against the USD. This allowed exporters to convert their FX earnings into more RMB and gave them more incentives to promote exports. As part of economic reform, the official market and the swap market were unified in January 1994 and the RMB was devalued from the official rate of 5.8 to 8.7 yuan per USD, the latter value being close to the black market rate. From 1994 to late 1998, the RMB has managed to appreciate slightly to around 8.28 yuan per USD (Figure 1).

Except for the first few months after the unification of the FX markets and for some individual months in subsequent years, the PRC has consistently enjoyed trade surpluses since 1994. This, coupled with foreign direct investment, has steadily raised FX reserve holdings from about 25 billion USD in January 1994 to slightly over 140 billion USD in the first half of 1998. It is true that the PRC has about 138 billion USD of foreign debt outstanding, but the sum accounts for only 14.5 percent of GDP and only 13 percent of it are short-term.⁵ On the whole, the external payments condition of the PRC was still quite healthy at

⁵Figures released by the State Administration of Exchange Control on October 29, 1998, reported by the *Hong Kong Economic Journal* (in Chinese), October 30, 1998.

the inception of the Asian crisis.

However, domestically speaking, given that the macroeconomy has come to a soft-landing with regard to taming inflation, the time has come to deal with the core problems of economic reform, namely, reform in the SOEs and the financial system. Despite high and continual economic growth, as well as a booming private sector, the state sector still accounts for a large share of the economy, and what is more important, its performance has been deteriorating. The return of economic decision-making power back to the enterprises is not accompanied by strong corporate governance. In 1996, the state sector accounted for 41 percent of output, but their contribution to growth and job creation was meagre. The private sector accounted for 80 percent of the growth and 90 percent of the new jobs in that year. In the same year, an estimated 50 percent of the SOEs made losses, compared with 33 percent two years ago. Moreover, at least 30 percent of them were effectively bankrupt. To make things worse, SOEs absorbed 75 percent of domestic credit, and most of their loans from banks were nonperforming (World Bank 1997b).

It was with such economic background in the PRC that the Asian crisis took place. The crisis did not hit the PRC economy directly. Unlike other economies that were seriously affected, there was no disruption originating in the PRC economy that spilled over onto the region. At the same time, it was quite well secluded from disturbances elsewhere, especially from international financial markets. The most obvious reason for the PRC to escape direct impact from the crisis is the nonconvertibility of the RMB. The RMB was made convertible only on the current account, although loopholes in the system make it able for some residents and domestic institutions to hold FX not for current account purposes.⁶ On the other hand, foreigners are not allowed to hold domestic bonds. Foreign capital inflow mainly takes the form of direct investment. The PRC has been a major absorber of foreign direct investment, second only to the United States, though most of it come from Hong Kong and overseas Chinese. Foreign portfolio investment, however, amounted to only 0.5 percent of GDP by 1995, much less

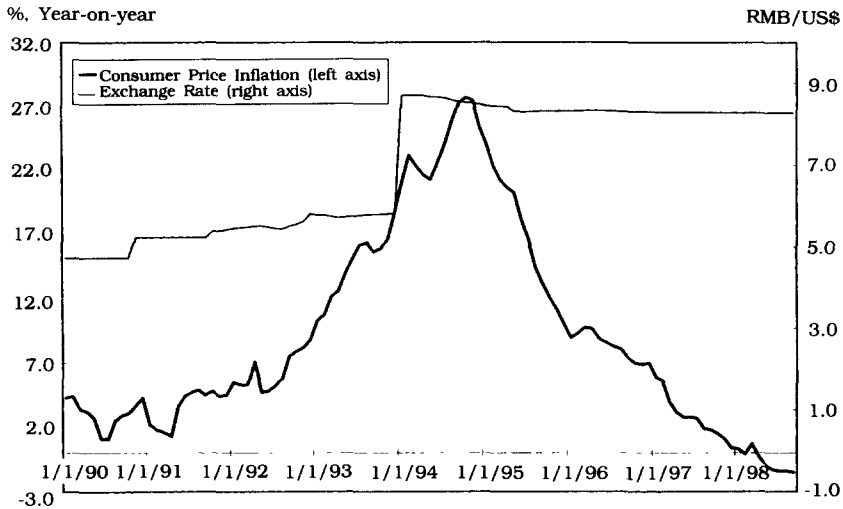
⁶The "error and omissions" item in the balance-of-payments accounts of the PRC is relatively large, and has been taken by some observers as an indicator of capital flight (Gunter 1996).

than the two percent average of the top 16 developing countries (World Bank 1997a). It is only limited to the holding of so-called B shares in the stock exchanges of Shanghai and Shenzhen, as well as shares of PRC enterprises listed overseas, mainly in Hong Kong (which are known as H shares). Without direct linkage to short-term international capital movements, the crisis did not take on the PRC in the same way as it did in other economies in the region.

There are commentaries with the view that the sharp devaluation of the RMB in early 1994 was an origin of the Asian crisis.⁷ As a result of this depreciation, the PRC enhanced its competitiveness in the world market at the expense of its Asian trade competitors, triggering trade deficits on the part of the latter, and subsequently precipitating the Asian crisis. However, as discussed above, the unification of exchange rates and the devaluation of the official rate from 5.8 to 8.7 per USD in 1994 were more formal than real. FX transactions for trade purposes had been undergoing in the swap market on a large scale as early as 1988, where the RMB value was actually much lower than the official rate. The IMF estimates that by 1993, the year before the large devaluation in the official market, about 80 percent of FX transactions were made at the swap market rate rather than the official rate (IMF 1997). The devaluation in 1994 actually eliminated the earlier impractical official rate without making exports much cheaper to foreigners as a whole. The boost of the 1994 exchange rate reform to exports was minimal.

Figure 1 shows the movement of the official RMB rate against the USD in the 1990s, as well as the inflation rate based on the consumer price index. Before 1994, the official rate was quite stable at 5.8 yuan per USD. However, competitiveness could still be increased as more and more export earnings were traded in the swap market. Yet this might not be the case as the early 1990s were years of rising and high inflation in the PRC. Similarly, since 1994, the inflation rate has come down gradually and consistently. To the extent that the PRC's competitiveness improved since 1994, it was much less the result of the official devaluation, as discussed above, but more that of the successful disinflation policy. Liu *et al.*

⁷For example, see "When China and India go down together," *The Economist*, November 22, 1997.



Sources: *China Economic News*, *China's Latest Economic Statistics*

FIGURE 1
PRC INFLATION AND EXCHANGE RATE

(1998) estimates that if 80 percent of FX transactions before 1994 were in the swap market, then on effective exchange rate basis, the RMB actually had a real appreciation in all the years 1993 to 1997. Other writers have also dismissed the significance of the nominal devaluation of the RMB as a strong contributing factor to the Asian crisis (Fernald, Edison, and Loungani 1998).

Although the PRC was not directly struck by the Asian crisis, there are still indirect effects which could still be significant. These are unavoidable as long as the PRC intends to get more and more involved in international economic activities. The first prominent effect is on the trade account. The trade account was negatively affected as the RMB maintained its value with the USD while other currencies in the region sharply depreciated. PRC exports have been rising by an average annual rate of 20 percent in the past years. They continued the growth trend in the second half of 1997, but by 1998, the volume of exports began to shrink, although there were still positive growth on a year-on-year basis. By May 1998, exports began to experience negative growth, being

1.74 percent less than the volume in May 1997, the first negative growth in about two years. At the same time, growth in FX reserves came to a halt in mid-1998 for the first time since late 1993. Official FX holdings in June 1998 was 140.51 billion USD, less than the value of 140.91 billion USD one month earlier.

As exports account for 20 percent of GDP (in 1997), a slowdown in exports is particularly important for the PRC economy in the current stage of economic reform. The government thinks it is imperative to maintain a certain level of economic growth to take away pressure resulting from enterprise reform and to absorb surplus labour from restructured SOEs. A respectable growth rate is also important for the banking sector as it has remained buoyant even with a high ratio of non-performing loans partly because of the rising volume of deposits from households, who have relatively few choices of assets. The eight percent growth target for 1998 has been repeatedly emphasized by government officials until mid-1998, when there have been increasing signs that it could probably not be met. In other words, the Asian crisis indirectly makes it more difficult for the PRC economy to undergo reform as planned. Moreover, interest rates have been lowered a few times in the past two years to stimulate economic growth.⁸ This would have made the RMB less attractive and triggered capital outflow had it not been for the nonconvertibility of the RMB. Further reduction in interest rates, should this prove necessary, would add pressure on the exchange rate. As the pressure keeps on mounting, there have been both talks and rumours that the RMB cannot maintain its USD value, and that a devaluation becomes necessary if the PRC government has to handle its domestic economy. This is the case despite repeated affirmation by top officials, including Premier Zhu Rongji himself, that the RMB will not be devalued.

Given that 55 percent of PRC's exports go to other parts of Asia,⁹ in view of the tremendous deflationary effect of the Asian crisis, the slowdown in exports may well be the result of the income effect rather than the relative price effect from devaluation of other Asian

⁸The People's Bank of China lowered interest rates five times in a row, the first time in May 1996 and the last one in July 1998.

⁹This figure is for 1997. See *Almanac of China's External Economics and Trade 1998/99*.

currencies. This is more obvious if one notes that PRC exports to the U.S. and Europe subsequent to the crisis were not that much affected. Table 1 shows that growth in exports to these two markets remained strong by mid-1998 when the issue of RMB devaluation or not was a world financial focus. Exports to other parts of Asia, however, was deteriorating fast, quite likely an indication of the income effect.

Although the high profile of not devaluing the RMB presented by PRC officials has made the RMB value a political issue, there are nevertheless economic reasons to query the benefits of a RMB devaluation to the PRC economy.

First, international competitiveness depends not only on the nominal exchange rate, but domestic and foreign price levels as well. In other words, it is the real exchange rate that matters. The expansionary effect of devaluation in other Asian economies could easily be offset by the consequent higher prices, to the extent that these economies rely on imported materials for their exports. By mid-1998, inflation rates in Thailand, the Philippines, and South Korea were close to double digit, while that of Indonesia was 60 to 70 percent.¹⁰ Second, the amazing reduction of inflation from double digit levels to nearly zero rate in recent years is already an indirect way of enhancing competitiveness of PRC exports. Third, even if devaluation in the rest of the region does stimulate foreign demand for their exports, these economies may not be able to meet such demand and expand their outputs readily, especially in the short term. In addition to speculating against the currencies, the crisis has also revealed weaknesses in the financial system in these economies, giving rise to banking crisis and as a result a credit crunch. The lack of bank credit also means shortage of working capital for exporters. Fourth, the PRC does have other means of stimulating exports. One traditional way is the tax rebate on exports which has been employed throughout the past years with good effects. Since July 1998, six major items of exports, including textiles and machinery, have been granted additional tax rebates from 2 to 8 percent.

On the other hand, a devaluation of RMB would further worsen the situation in Asia, triggering competitive devaluations and lowering demand for PRC goods in the region through the income effect.

¹⁰Figures from IMF, *International Financial Statistics*.

TABLE 1
 PRC EXPORT IN 1998 (Year-on-year growth rate)

Destination	(percentage)	
	July	Jan-Jul
U.S.	17.8	17.9
Europe	29.8	25.3
Japan	-4.0	-4.7
South Korea	-30.9	-30.8
ASEAN	-7.4	-8.6
All destinations	3.5	6.5

Source: China Statistics Information and Service Centre

Also, the PRC is already running huge trade surpluses with the U.S. A lower RMB value would easily invite unfriendly gestures from the U.S. Congress.¹¹ In addition, by refraining from devaluing the RMB (and hence the HK dollar as well, see below), the PRC government has succeeded in presenting its image as a responsible member of the international community. In fact, it has made use of this piece of evidence as an argument to apply for membership to the World Trade Organization (WTO). Even if the WTO issue is set aside, the PRC has asserted itself to be a stabilizing economic force in the region, and a power in the international economy to be reckoned with.

There is the official argument (made by Premier Zhu Rongji himself) that the RMB is not devalued mainly because of Hong Kong. It is alleged that a lower value of the RMB would create tremendous speculative pressure against the convertible Hong Kong dollar (HKD), which would be disastrous for Hong Kong. However, this line of thinking is disputable. There is no clear cut effects of a cheaper RMB on the Hong Kong economy. In fact, to the extent that a RMB devaluation could stimulate PRC exports, Hong Kong could stand to benefit through providing more services for PRC trade as it has been doing in the past decade. Hong Kong could also gain through cheaper imports from the PRC; it relies on the

¹¹See, for example, "China's Export Subsidies Draw Warning from U.S.," *Asian Wall Street Journal*, October 29, 1998.

PRC for many daily items such as foodstuff. Nevertheless, investors have somehow taken the official argument for granted and formulate expectations accordingly. As a matter of fact, some investment bankers have advised multinationals doing business in the PRC to short sell HKD just in case the RMB would devalue and wipe out their earnings in terms of USD.¹² The RMB itself cannot be shorted as it is not freely convertible. Such an advice in effect draws an equal sign between a RMB devaluation and a HKD devaluation. As a result, when there are signs that the PRC economy is slowing down or the RMB is weakening, the HKD is also subjected to selling pressure.

By summer 1998, the yen had depreciated to over 140 to the USD. This has submerged confidence in the ability and desirability of the PRC government to uphold its promise not to devalue the RMB. This prompted the PRC to call on the U.S. and Japanese governments to defend the yen, with positive responses. There have also been unofficial show of preference, for example, newspaper articles by government research agencies, that should the yen keep on falling, the RMB may have to follow suit. In addition to paving the way for a possible turn around in case the RMB actually devalues, these doubts may be intended to put pressure on U.S. and Japan, so that they too have to be blamed if the PRC finally decides to devalue the RMB.

It is expected that, barring sharp depreciation of the yen, the RMB will not devalue, especially when the Asian crisis begins to calm down. And in case the yen depreciates sharply, it would mean disaster to the region anyway, whether the RMB devalues or not. In the meantime, the PRC will make unremitting efforts to maintain stability of the RMB while trying hard to meet respectable growth rate. In addition to the tax rebates on exports and the cutting of interest rates mentioned above, exporting firms are allowed to keep a larger percentage of their FX earnings to give them more incentive to export. Also, bank reserve ratios have been lowered, and government infrastructure investment have been speeded up, while policies to sell and restructure SOEs have slowed down. Government investment has been the main component of aggregate demand that supports the growth rate. In addition to the slowdown

¹²This was reported by the *Hong Kong Economic Times* (in Chinese) on 1 June 1998.

of exports, consumption growth has also slowed, partly the result of expected enterprise reform that could put millions out of work.

Another major indirect impact of the Asian crisis on PRC is probably the postponement in allowing full convertibility of the RMB. As of now, the RMB is convertible only in the current account. PRC officials have put on the agenda of reform to make it convertible in the capital account as well. Some years ago, they had some kind of a vague schedule to carry out, but in the past few years no fixed time table has been mentioned, probably because of the complexity of the issues involved. In view of the disruptive effects of short-term international capital movement as evidenced during the Asian crisis, it is quite likely that full convertibility of the RMB will be further delayed. In fact, towards the end of 1998, a vice-governor of the People's Bank of China was reported to point out there was no time table for RMB full convertibility "in view of the domestic and international financial environment".¹³

As a matter of fact, from a theoretical point of view, the PRC economy is certainly not yet prepared for full currency convertibility. Its financial system is still very backward, and can by no means weather disturbances originated from massive capital inflows and outflows. Early proponents of financial liberalization have later come to recognize the importance of the sequencing of reform. Most economists would now agree that the lifting of capital control should be deferred until the very late stages of economic reform (McKinnon 1993). There is also evidence that rapid financial liberalization could introduce financial disruption if the banking system is not strong enough.

The current PRC banking system is still very inefficient and has yet to be overhauled. It is dominated by state banks, with the latter accounting for 73.8 percent of total deposits and 78.8 percent of total loans at the end of 1996. The nonbank financial institutions, though accounting for much smaller shares of assets and liabilities in all financial institutions, are in much poorer form because of the lack of effective regulation and supervision. Moreover, the People's Bank of China has yet to gain effective monetary control through economic instead of administrative means. It is still

¹³Reported in the *Hong Kong Economic Times* (in Chinese), November 28, 1998.

in an early stage of practising open market operation, and the results have yet to be tested. This is particularly the case when recently bank loan quotas have been eliminated and banks are supposedly expected to rely on their own asset and liability management. It is still unknown how money and credit can be smoothly controlled without resorting to administrative means. This would certainly become much more difficult if free capital mobility is allowed. Without deeper and wider reform in the financial sector, especially the banking system, and without more effective monetary control, it is certainly not wise to allow for full convertibility of the RMB. The Asian crisis makes it clear that these preconditions have to be met before opening up the capital account. Yet, both financial reform and monetary policy setup cannot be achieved in the short term. Thus, it will still be a long period of time before the RMB becomes fully convertible.

Moreover, sound macroeconomic management is only a major, but not foolproof, prerequisite for capital account convertibility. A strong institutional environment, such as the rule of law, good contract enforcement, and a low level of corruption, would help to reduce financial fragility under liberalization (Demirgüç-Kunt and Detragiache 1998). There are still a lot to be done in the PRC to strengthen these institutions.

As a side point, RMB convertibility has some bearing on the Hong Kong economy. It has been pointed out that Hong Kong would lose its competitive edge as a financial center, especially one for the Chinese Mainland, as long as Shanghai regains its financial prowess which it had in the 1930s. This may not be true as for an economy with the size that of the PRC, Shanghai and Hong Kong may be able to both survive as financial centers. Whether this is possible or not remains to be seen. However, to the extent that the RMB is not fully convertible, Shanghai cannot secure the position as an IFC. It would be difficult to imagine how a city could be an IFC without having its domestic currency being fully convertible. The HKD, on the other hand, is guaranteed its circulation and convertibility by the Basic Law, often taken as a mini-constitution of the Hong Kong Special Administrative Region decreed by the People's Congress of the PRC. Shanghai will be a national financial center for the PRC, but will not be able to compete with Hong Kong for international financial business until the day the RMB becomes fully convertible, which may still be some years away.

Since recovery after the Asian crisis is only at the beginning if at all, it can only be speculative to speak of the outlook on the PRC economy in the aftermath of the crisis. To the PRC, what is more important is continued reform, especially in the SOEs and the financial sector. The Asian crisis came as disruptions to this process which in itself is already not easy to carry out successfully. One needs only think of the tens of millions of employees that could be laid off as the SOEs undergo structuring, mergers, and bankruptcies to have some feeling of the difficulties. Should the crisis not get worse than it was in 1998, then its impact on the PRC economy as a whole is quite limited, mainly because the latter is still shielded from the international capital market. The PRC will continue its reform path as in the last 20 years and it will come out of the crisis relatively unscathed.

III. Experience and Adjustment in Hong Kong

Unlike the PRC economy, the economy of Hong Kong is extremely open and government participation in economic activities have been minimal, except in three major social items, namely, housing, education, and medical care. Hong Kong has maintained high rates of economic growth since the 1950s, although growth rates have come down since the 1990s. The average annual real growth rate for the period 1961 to 1996 was 7.6 percent, but only 5.4 percent for the years 1991-6.¹⁴ For 1997, it was 5.3 percent.

The Hong Kong economy has been very flexible, being ready to take advantage of economic opportunities it comes across, and rebound rapidly from economic adversities. After decades of take-off and development in the 1960s and 1970s, capacity constraints led to increasing costs of production in the form of higher wages and rentals. Fortunately, the PRC began to undertake economic reform and opening up in the late 1970s, and Hong Kong was able to make use of the occasion to relocate its manufacturing sector in the Mainland, while Hong Kong itself transformed rapidly to a services center. In 1996, services accounted for 84.4 percent of GDP, up from 67.5 percent in 1980 (Hong Kong SAR 1998a).

Given that the economy of Hong Kong is so open and relatively

¹⁴Unless otherwise stated, figures on Hong Kong come from the Census and Statistics Department and the Hong Kong Monetary Authority.

small, it cannot help but be subjected to disturbances from international markets. These outside shocks easily translate into economic ups and downs, but traditionally the Hong Kong government does not and cannot do much about it. Fiscal policies may help, but the conservative budgets usually leave the government with surpluses. Even if fiscal policies are intentionally carried out for stabilization, the effects would be relatively small given the fact that most of the goods and services consumed are imported. The multiplying effect is small.

There has been no central bank in Hong Kong, and the institutions in charge of monetary policy (the Office of the Exchange Fund in the past, or the Hong Kong Monetary Authority currently) aim to control the exchange value of the HKD rather than its quantity. Since October 1983, the HKD has been linked to the USD (known as the "linked exchange rate" system) and monetary policy in Hong Kong has to be dictated by that in the U.S. Thus on the whole the Hong Kong government does not have much leeway in employing policies for macroeconomic stabilization.

The linked exchange rate system was adopted in late 1983 to halt the downfall of the value of the HKD which resulted from uncertainties arising from talks between the PRC and the U.K. over the political future of Hong Kong after 1997. The talks culminated in the Joint Declaration by which Hong Kong was to return to the PRC as a Special Administrative Region (SAR) under the principle of "one country, two systems", and Hong Kong was to keep its economic system intact. The period 1983 to 1997 therefore represents one in which people in Hong Kong could freely optimize, hedge, and prepare themselves for the political change. The economy performed quite robustly in these years, attaining an average real growth rate of 6.1 percent per year, while the unemployment rate was kept low at an average of less than 2 percent. The exchange value of the HKD was kept stable at within 1 percent of the official rate, despite disturbances such as constant bickering between the PRC and the U.K. over political development in Hong Kong, the global stock market crash in 1987, the Tiananmen Square incident in 1989, the bankruptcy of the Bank of Credit and Commerce International in 1991, the Mexican peso crisis in 1995, and the change of sovereignty in 1997.

One macroeconomic performance during this period under the linked exchange rate system that is not so desirable is inflation.

Although the unit price of export increased by an annual rate of only 2.2 percent, mainly a result of low inflation rate in the world market in general and in the U.S. in particular, domestic consumer price index inflation averaged 7.5 percent per year. On the other hand, since the value of the HKD was stable with respect to the USD, interest rates in Hong Kong had to follow U.S. levels, which had been lower than 7.5 percent. The difference is even greater for depositors. Negative real interest rates over a long period of time had fuelled asset price inflation and speculation sentiments.

Besides bank deposits, the major assets markets in Hong Kong are the stock market and property market. The former is volatile given the relatively small market capitalization and free international capital mobility. The property market, on the other hand, is less liquid and more affected by local factors, but can be equally speculative given the uncertainty introduced by government intervention in the name of taming the market for the good of the public. For the years before 1997, land sale, or more accurately, the auctioning of land use rights, was limited to 50 hectares every year, an agreement between the PRC and the British. Land is scarce in Hong Kong relative to the volume of its economic activities, so much so that land sale has been a major source of income for the government, helping to keep low the levels of profit tax and salaries tax rates. The agreement was meant to limit the amount of land sales by the British before 1997, but it failed to accommodate the large demand for properties during a period of robust economic growth. Property prices in Hong Kong skyrocketed on the whole in the 1990s. Residential property prices increased drastically by 43.5, 31.2, and 43.1 percent in the years 1992, 1994, and 1997 respectively. Government measures were introduced in 1994 to curb soaring housing prices, including a cap on mortgage loans at only 70 percent of property values, so that prices fell by 12.6 percent the next year. Changes in the other years were much less sensational.

It was with such economic background that Hong Kong entered a new political phase as a SAR of the PRC in July 1997, and was hardly struck by the Asian crisis three months afterwards. Unlike other Asian economies directly involved in the crisis, the issues facing Hong Kong are first not one of external debt burden made worse by declining value of the domestic currency. The Hong Kong government has no external debt, and has been holding onto large

TABLE 2
HONG KONG RECENT ECONOMIC STATISTICS

	Gross Domestic Product (real)	Consumer Price Index	Retail Sales (real)	Trade in Goods (real)			Residential Property Prices	Unemployment (seasonally adjusted)	
				Domestic Exports	Re-exports	Imports			
year-on-year growth rates, %							% change in period	%	
1991	5.1	11.6	10.4	0.5	26.6	19.0	N.A.	1.8	
1992	6.3	9.6	12.0	0.1	28.3	22.3	43.5	2.0	
1993	6.1	8.8	6.9	-4.5	19.6	12.8	8.7	2.0	
1994	5.4	8.8	5.8	-2.3	13.8	14.0	31.2	1.9	
1995	3.9	9.1	-1.4	1.9	14.3	13.7	-12.6	3.2	
1996	4.6	6.3	1.6	-8.4	7.5	4.3	8.5	2.8	
1997	5.3	5.8	1.1	2.2	6.8	7.2	43.1	2.2	
1997	Q1	5.7	6.1	2.0	-3.9	5.5	6.4	17.8	2.5
	Q2	6.9	5.7	5.1	-0.1	7.3	6.9	14.8	2.4
	Q3	6.1	6.1	2.5	5.9	4.2	7.1	2.2	2.2
	Q4	2.8	5.5	-4.9	5.6	10.3	8.2	-5.5	2.5
1998	Q1	-2.6	5.0	-14.9	-4.6	2.5	-1.7	-18.7	3.5
	Q2	-5.1	4.4	-16.2	-0.6	-0.5	-1.7	-11.3	4.4
	Q3	-7.1	2.8	-19.6	-9.3	-6.6	-10.5	-19.5	5.0

Source: Census and Statistics Department, Hong Kong Special Administrative Region

volumes of FX reserves, mainly in the form of USD. These reserves are partly back-ups required for the issue of HKD banknotes, and partly the result of government budget surpluses in the past decades. Total official FX holdings reached 96.5 billion USD as at end-June 1998, the third largest sum in the world and the highest on a per capita basis.

Secondly, the problem of Hong Kong during the crisis was not one of a defective banking system collapsing under pressure. The 180 licensed banks in Hong Kong, most of which subsidiaries and branches of foreign banks, have been well supervised and regulated. It is true that there was one case of bank run during the crisis, but it turned out that it was triggered by pure rumours and was easily solved in one or two days. In September 1997, right before the crisis hit Hong Kong, the ratio of loans overdue by more than 90 days to total loans outstanding was only 0.1 percent. Local banks in Hong Kong are all well capitalized. The capital adequacy ratio stood at 17.8 and 17.5 at the end of 1996 and 1997 respectively, more than double the 8 percent required under

the Basle Agreement (Yam 1998).

Thirdly, the problem in Hong Kong was not one of crony capitalism, as alleged by some Western observers concerning the Asian crisis as a whole. Financial flows in Hong Kong are disciplined by open and transparent markets as well as market competition. Cronyism in Hong Kong, if any, can only be minimal and certainly would not be so strong as to turn the economy around.

If there is any factor endogenous to the Hong Kong economy that prompted the crisis, it is the perceived loss of competitiveness after long years of moderate inflation while the exchange rate was kept stable, that is, a continual real appreciation of the HKD. Whether Hong Kong's competitiveness was actually eroding vis-a-vis other economies remains to be analyzed, as the changes in the real exchange rate may reflect underlying changes in real factors such as demand and productivity. However, it is perception, justifiable or not, that matters most in short-term financial flows. As Asian currencies devalued one after another in the third quarter of 1997, this perception was made sufficient excuse to speculate against the HKD. The core experience of Hong Kong in the Asian crisis was the defense of the HKD, and to the extent that this was successful, the attack was translated into plunges in asset prices through high interest rates, resulting in wealth effects so negative that held down aggregate demand, especially consumption.

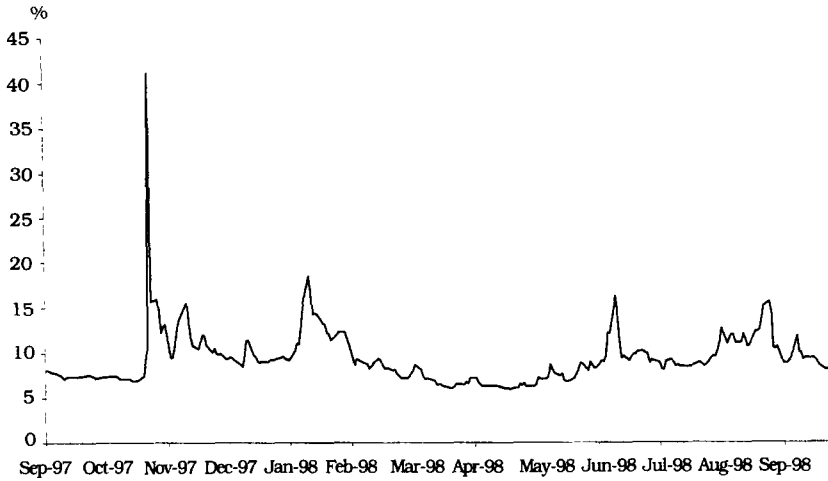
The linked exchange rate system in Hong Kong is different from the usual fixed exchange rate regime. It is actually a variation of the traditional currency board system. Bank notes are issued subject to the availability of FX at pre-determined exchange rates. The money supply therefore varies with the balance of payments and adjusts through the price-specie flow mechanism in much the same way as under a gold standard. The system represents a monetary system by rule, and the authorities cannot vary the money supply in a discretionary manner. A conventional currency board is completely passive, exchanging domestic currency for FX and vice versa at a given price on demand. As such, it does not act as a lender of last resort and this is considered to be one of its weaknesses (Santiprabhob 1997). Under the Hong Kong linked exchange rate system, however, the Hong Kong Monetary Authority (HKMA) could control the amount of liquidity to licensed banks through what is called the Liquidity Adjustment Facility (LAF).¹⁵ The LAF resembles a discount window whereby banks can borrow

HKD overnight from the HKMA using some prescribed assets as collateral.

The HKD has been speculated against before, notably during the Mexican peso crisis from late 1994 to early 1995. In that episode, the HKMA succeeded in forestalling speculation by pulling up HKD market interest rates. Since the speculative attack came from outside, these foreign investors had to borrow HKD in order to sell. They would incur heavy costs with rising interest rates if the exchange rate remains unchanged at the end. That was exactly what happened in early 1995 and the HKD was easily defended. Thus, high interest rates have been considered by the HKMA as a powerful and effective weapon against speculators. However, in the Asian crisis, not only did the same measure not work well to fight speculation, it also brought about lingering disruptive effects of high interest rates in the economy (Figure 2).

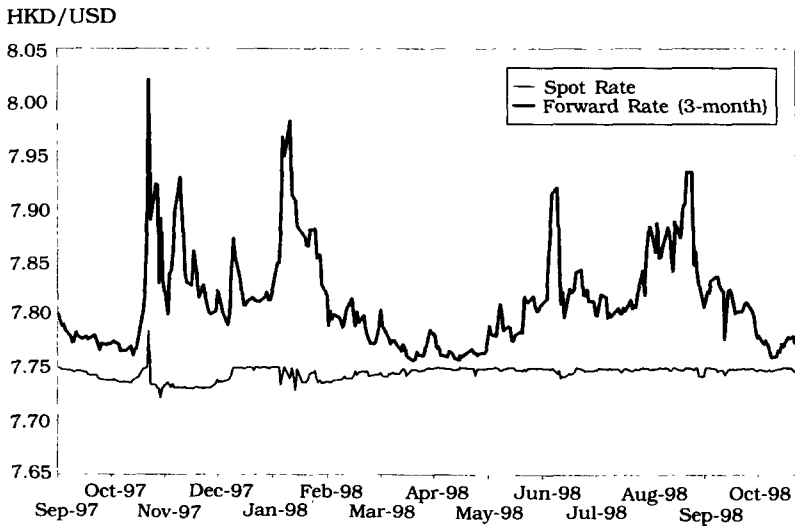
Maybe because speculators had learned their lessons in the Mexican peso crisis. During the Asian crisis, they as a whole were able to position their portfolios to reap lucrative returns instead of being penalized by high interest rates. They might pose themselves to gain in the spot exchange market as in previous attacks, but this time they actually had the stock futures market and the forward exchange market instead of the spot market in mind. Before they borrowed and sold HKD spot, they might have already held short positions in the Hang Seng Index Futures market and the forward HKD market. When the HKMA pulled up interest rates as usual to fight spot FX market speculation, stock prices as well as stock futures fell and those with short positions would gain. As for the forward HKD market, since Hong Kong is very open with free capital mobility, covered interest parity can be considered to be valid on the whole. Under covered interest parity between the U.S. and Hong Kong, as long as U.S. interest rate levels are relatively constant, and if the spot market value of the HKD is successfully defended and so does not change, a higher Hong Kong interest rate necessarily implies a weaker HKD in the forward market, benefiting those with short HKD positions in that market (Figure 3). An examination of Figure 2 and Figure 3 shows co-movements of the interbank rate and the HKD value in the forward market. Thus,

¹⁵The LAF was officially replaced by the discount window in September 1998.



Source: Datastream

FIGURE 2
HONG KONG INTERBANK RATE (3-MONTH)



Source: Datastream

FIGURE 3
HONG KONG EXCHANGE RATES

speculators may seem to lose the battle of spot market HKD and suffer high interest costs, they actually won handsomely on other fronts.

To make things more dramatic, in October 1997 when there were signs of speculative attacks on the HKD, the HKMA issued a guideline to the licensed banks against repeated uses of the LAF. Banks that did so would be subjected to unprescribed penalties. The idea of the guideline is to limit the holding of HKD by speculators, so that they did not have that much HKD to dump. The LAF could be a loophole for banks to borrow HKD from the HKMA on behalf of their speculator customers, and the HKMA would like this to be plugged to make its high interest rate measure more effective. However, the HKMA did not specify what was meant by "repeated uses" of the LAF, and the penalties were not specified. More unfortunately, this guideline came on a day in October when the banks needed lots of HKD for clearing. Their customers had sold large volumes of HKD the days before and it was time for bank clearing of these transactions. These banks were greatly discouraged by the HKMA to use the LAF for liquidity for clearing. They were forced to go to the interbank market for funds. Given the large volume of clearing needs, the interbank rate soared drastically, and for about two hours time hit 280 percent. Interbank rates have remained high and volatile since then, and given the USD LIBOR have been stable at about 4 percent or so, HKD rates have been higher by several hundred basis points (Figure 2). These interest differentials represent the risk premium on the HKD vis-a-vis the USD, and have been instrumental in pulling the Hong Kong economy into a recession.

Realizing that the HKMA had high interest rates as the only weapon, speculators attacked the HKD apparently in the spot market and reaped profits in the stock index futures and forward exchange markets episode after episode. Whenever there were uneasy sentiments in the market, such as fear that the RMB might devalue, or that the yen might weaken further, or the announcement of figures of poor economic performance, banks in Hong Kong would increase their hoarding of reserves, liquidity dry up, interest rates soar, stock prices fall, and the currency weakens in the forward market. The economy was badly pushed into a recession as a result. In the first three quarters of 1998, real GDP recorded drops of 2.6, 5.1 and 7.1 percent on a year-on-year basis respec-

tively. It was a positive solid 6.1 percent in 1997Q3 when Hong Kong was returned to the PRC, and 2.8 percent in 1997Q4 right after the Asian crisis started. At the same time, the unemployment rate climbed from 2.2 percent in 1997Q3 to 2.5 and 3.5 percent in subsequent quarters, up to 5.0 percent in 1998Q3. It is widely believed that the situation will get worse before it gets better.

Despite repeated uses of the new technique by speculators to profit from speculation against the HKD, the Hong Kong government was still suspicious of such technique and was reluctant to assert that speculators were taking advantage of the relationship between the spot exchange market, the stock futures market, and the forward exchange market (Hong Kong SAR 1998b, para. 4.112). This means that controlling liquidity and pulling up interest rates continued to be the only way of defense against speculative attacks. However, when the same kind of attack came again in August 1998, the authorities completely changed their attitude and policy reactions. Not only did they now acknowledge the link between the various markets, they even confronted the speculators directly. The HKMA took the whole world by surprise by directly intervening in the stock market, buying practically whatever amounts of major shares dumped in the market to support share prices and the stock price index. The aim was to "penalize" speculators with short positions in the stock price index futures and forward HKD markets.

The drastic move by the HKMA was undoubtedly controversial, especially in an economy that had been acclaimed as the epitome of the free market. In the short-term, the intervention might be considered by some as "necessary" to safeguard Hong Kong against attacks, but in the longer term, it certainly does more harm than good. Not only is the image of Hong Kong as a free market badly tarnished, the holding of shares by the government has introduced an additional element of uncertainty in the market. Whether and how the government disposes of its holdings of shares remain intriguing problems to investors,¹⁶ and the total holding is enormous. The HKMA spent 15.2 billion USD altogether in the operation, making the government the second or third largest shareholders in the economy's 33 largest companies.¹⁷ There is also the

¹⁶So far the Hong Kong SAR government has set up a company to manage these share holdings and stressed it would not sell the shares, at least not in the near future.

problem of conflicts of interest as the government is now both a regulator and shareholder of these companies.

If there was any positive turnout of the stock market intervention, it was another turnaround in government attitude to defend the HKD exchange rate, and this time it was a change for the good. Instead of maintaining the peg to the USD through artificially manipulated high interest rates, the HKMA resorted to enlarging the liquidity base and thus relieving the economy through lower interest rates. The 15.2 billion USD spent on domestic stocks amounted to roughly 15 percent of Hong Kong's FX reserves. Although the original intervention was to safeguard the link of the HKD to the USD, the operation actually endangered the link through large depletion of FX reserves. The authorities might finally realize there was not much room for further manoeuvre if they stuck to previous policy responses. On 5 September the HKMA introduced the so-called "seven technical measures" to strengthen Hong Kong's currency board system. Among others, these measures include the government's commitment to convert bank clearing accounts to USD at fixed values, as well as a smoother mechanism for banks to get liquidity (HKMA 1998). Even without the depletion of FX reserves due to stock market intervention, high interest rate policy might still have to be forsaken as the economy continued to contract. Fear that people in Hong Kong might not be willing to pay a high price in terms of high interest rates to defend the exchange rate link would trigger further run on the HKD. In this case, even higher interest rates would not help as that would add further pain to the economy. The equilibrium was unstable. It was quite fortunate for Hong Kong that interest rates began to fall in October 1998, partly the result of the "seven technical measures", and partly because the U.S. cut interest rates twice. The demise of some hedged funds and the strengthening of the yen vis-a-vis the USD also helped.

High interest rates resulting from defending the HKD was not the only major factor that pushed the Hong Kong economy into recession for the first time in a long time. Another factor, which is more institutional and therefore could be more lasting, is the perceived change of economic policy regime under the new SAR

¹⁷"HKMA Bought 7.3% of Shares in Top Firms." *Asian Wall Street Journal*, October 27, 1998.

government. The government was probably too eager to establish credibility and gain popular support. It came into being right at the time when Hong Kong once again experienced rampant asset price inflation, especially in the property market. There were public calls for the government to curb rising housing prices, for both right and wrong reasons. In any case, the new government took on housing policy as one of its main policy focuses, and made a sharp turn around by announcing to provide much more land and housing units in the future. In the policy address by the Chief Executive of the SAR, Mr. Tung Chee-hwa, he targeted to build at least 85,000 units of housing every year, and aimed to achieve a home-ownership rate of 70 percent in 10 years.¹⁸ Both figures represent sharp rises from their current levels. Unfortunately, right after these new targets had been set, the economy ran into high interest rates, credit crunch, rising unemployment and a recession that could be protracted. Needless to say, property prices fell sharply, and they are still on the downward trend. Residential property prices dropped by 5.5 percent within 1997Q4 and 18.7, 11.3, and 19.5 percent in the first three quarters of 1998 respectively, a total sharp fall of 40 to 50 percent in a single year (Table 2). At the same time, stock values as summarized by the Hang Seng index were also more than halved. The index reached a historic high of 16,600 in August 1997; it came down to 7,300 in early August 1998. It has been estimated that losses in the stock market and property market in the first year after the crisis hit have cost Hong Kong 4 trillion HKD (or 516 billion USD), three times the value of Hong Kong GDP in 1997.¹⁹ No wonder personal consumption and the economy shrank drastically.

What is more disturbing is that, in view of the difficulty in the property market, and the importance of this market for the Hong Kong economy, the government wavered in its housing and land policy. It has put forward some minor policies, such as the suspension of land auction for nine months and interest-free loans to first-time property buyers, to help increase demand for residential property, but to no avail. The problem is the government has not

¹⁸The 1997 Policy Address by the Chief Executive, Mr. Tung Chee Hwa on October 8, 1997, para. 52.

¹⁹"Economic Setbacks Batter Hong Kong," *Asian Wall Street Journal*, August 4, 1998.

made clear whether its proposed home-building and home-ownership targets remain effective or not, and this is perceived as a very important uncertainty element by the market. Housing in Hong Kong is more an investment good than consumption good. There is practically nobody in Hong Kong who does not have any sheltering. The rental market is active, and 34 percent of the population live in public rental housing. Property has been considered to be a good means of investment because of the limited supply of land relative to the prospering economy in the past decades. To the extent that housing is an investment good, housing demand would be more forward looking. Given uncertain developments in the economy as well as uncertain government housing policies, it is not surprising to find that home purchasers are not eager to enter the market right away, including those who called on the government to curb property prices last year. The government perceives that too high or too low property prices would not make it popular, but it has forgotten that it cannot manipulate both the price and the quantity of a commodity at the same time. It is such intervention with "good" intention that has tainted the original policy making framework and introduced gaps in understanding between market participants and the government. Economic policies have become economic shocks themselves and introduced unnecessary uncertainty to the market, witness the way monetary and housing policies were carried out in Hong Kong since the Asian crisis.

Again, the Asian crisis has yet to fully unfold and it is not sure how the Hong Kong economy will fare in the future. But it is true that it has come to major difficulties for the first time in a long time. As long as domestic residents do not sell their HKD assets and deposits for USD, given the large volume of FX reserves, the linked exchange rate should be defensible. Adjustment would have to be in domestic prices and wages. The issue is how long and to what extent these adjustments will be, and would such costs be too large for Hong Kong people to lose faith in the linked exchange rate system and begin massive selling of HKD. The system has weathered through many episodes of bad times and it was able to hang on in the recent Asian crisis as well. It is expected that the system is going to stay, at least in the near future, so that further adjustments in domestic prices and wages are necessary. Hopefully, the flexibility and resilience of the Hong Kong economy will make such adjustments less painful than otherwise. Hopefully also,

the SAR government will refrain from unnecessary fine-tuning of the economy and regain the long-standing effective policy touch as in the past.

IV. Conclusion

The experience of most Asian economies in the past year shows the consequence of strong economic growth against a backdrop of financial fragility. Sharp exchange rate devaluation was one fallout of the crisis, among others. The PRC and Hong Kong economies were different in that they have tried hard to refrain from having exchange rate adjustments and bear with the deflationary repercussion.

The PRC's financial system is not quite liberalized yet. It responds to the crisis in making strong efforts to keep its reform path from being derailed, trying to maintain descent growth rates to facilitate its enterprise and financial reforms. Recent lessons from nearby countries should reinforce the necessity and determination to strengthen its financial system on one hand, but make it more cautious of the backfire that liberalization could bring.

The Hong Kong experience shows that an open and liberal regime with good prudential measures could still run into crisis, especially with unsound policy responses. The Asian crisis may validate further concerted efforts by the international community to regulate financial flows, but that is certainly not a substitute for sound domestic economic management.

(Received August, 1998; Revised January, 1999)

References

- Almanac of China's External Economics and Trade 1998/99.* Beijing: China Economic Publisher, 1998.
- China Economic News.* Hong Kong: Economic Information and Agency, various issues.
- China's Latest Economic Statistics.* Hong Kong: China's Statistics Information Consultancy Service Centre, various issues.
- Demirgüç-Kunt, Asli, and Detragiache, Enrica. "Financial Liberali-

- zation and Financial Fragility." Policy Research Working Papers No. 1917. Washington, D.C.: The World Bank, 1998.
- The Economist*. November 22, 1997.
- Fernald, John G., Edison, Hali J., and Loungani, Prakash. "Was China the First Domino? Assessing Links between China and the Rest of Emerging Asia." International Finance Discussion Papers No. 604. Washington, D.C.: Board of Governors of the Federal Reserve System, 1998.
- Gunter, Frank R. "Capital Flight from the People's Republic of China: 1984-1994." *China Economic Review* 7 (No. 1 1996): 77-96.
- Hong Kong Monetary Authority. "Strengthening of Currency Board Arrangements in Hong Kong." *Quarterly Bulletin*. Hong Kong: Hong Kong Monetary Authority (November 1998).
- Hong Kong Special Administrative Region. *Estimates of Gross Domestic Product: 1961 to 1997*. Hong Kong: Census and Statistics Department, 1998a.
- _____. *Report on Financial Market Review*. Hong Kong: Financial Services Bureau, 1998b.
- International Monetary Fund. *World Economic Outlook: Interim Assessment*. Washington, D.C.: International Monetary Fund, 1997.
- Liu, Ligang, et al. "Asian Competitive Devaluations." Working Paper 98-2. Washington, D.C.: Institute for International Economics, 1998.
- McKinnon, Ronald I. "Macroeconomic Control in Liberalizing Socialist Economies: Asian and European Parallels." In Alberto Giovannini ed., *Finance and Development: Issues and Experience*. Cambridge: Cambridge University Press, 1993.
- People's Republic of China, State Statistical Bureau. *China Statistical Yearbook*. Beijing: China Statistical publishing House, various issues.
- Santiprabhob, Veerathai. "Bank Soundness and Currency Board Arrangements: Issues and Experience." IMF Paper on Policy Analysis and Assessment No. ppaa/97/11. Washington, D.C.: International Monetary Fund, 1997.
- World Bank. *China 2020: Development Challenges in the New Century*. Washington, D.C.: The World Bank, 1997a.
- _____. "China's State Sector: Bleak Facts and Figures." *Transition* 8 (October 1997b): 3.
- Yam, Joseph. "The Hong Kong Dollar Link." *Quarterly Bulletin*. Hong Kong: Hong Kong Monetary Authority (May 1998): 45-59.