

# **Hong Kong's Experience in Operating the Currency Board System**

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## **I. INTRODUCTION**

When Hong Kong revived the currency board arrangements in October 1983, it faced a financial world that was vastly different from that earlier in the century when currency boards flourished in British colonies and protectorates.<sup>1</sup> Bank deposits had taken over currency notes as the predominant medium of exchange. Capital mobility had been significantly enhanced: large sums of money could be transferred across national borders within a fraction of a second. Moreover, following the demise of the Bretton Woods system, most major industrialised economies had floated their currencies, and sharp volatility was seen in the international foreign exchange market from time to time. Furthermore, indigenous banks had grown along with foreign banks, requiring more attention to issues such as the provision of support as a lender of last resort.

Hong Kong presents an interesting case study not only because it has a relatively long history in operating a modern-day currency board. The structure of the economy, characterised by a high degree of openness, complete absence of exchange controls, and sizeable financial flows, makes it particularly prone to challenges of the present-day financial system. Our experience in tackling these problems may be of relevance to other currency board economies.

The rest of the paper is organised as follows: the next section describes the circumstances under which the linked exchange rate system was adopted in 1983. This is followed in section III by a discussion of the reforms undertaken to strengthen the system from 1988 up to the period before the Asian financial turmoil in 1997. Section IV recounts salient aspects of our experience during the turmoil, while section V discusses further technical reforms to enhance the resilience of the monetary arrangements. Section VI turns to the economic adjustment process in the post-crisis

period, examining adjustments in the corporate sector, banking sector developments and fiscal policy. The final section highlights some of the challenges ahead.

## **II. BACKGROUND LEADING TO THE ADOPTION OF THE LINKED EXCHANGE RATE SYSTEM**

In the history of Hong Kong, a fixed exchange rate system has been a norm rather than an exception. This largely reflects the characteristics of Hong Kong as a highly externally-oriented economy, which desires a firm anchor for the external value of its currency.<sup>2</sup> In this respect, Hong Kong differs from most other currency board economies that in recent years adopted the system as a strong commitment to halt hyper-inflation.

As seen in Table 1, the Hong Kong dollar floated for only nine years, from 1974 to 1983. The economy performed well in the early part of this period: it recovered speedily from the oil crisis, achieving impressive growth (of over 10%) with moderate inflation (of 4-6%) in 1976-78. However, signs of overheating emerged in late 1970s, fuelled by public construction projects and the booming property market. Growth of broad money supply and domestic loans escalated to average annual rates of 35% and 43% respectively between 1979 and 1982. Consumer inflation surged to over 15% in 1980-81, and the exchange rate of the Hong Kong dollar depreciated by over 20% during the period from 1979 to 1982 (Charts 1 & 2).

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<sup>1</sup> Before 1935, the Hong Kong dollar was based on the silver standard. It was only after the abandonment of the silver standard in China that the Hong Kong dollar was fixed against the pound sterling under the currency board arrangement. See also table 1.

<sup>2</sup> Visible and invisible trade accounted for about 300% of GDP in 2000.

**Table 1**

<b>Date</b>	<b>Exchange Rate Regime</b>	<b>Reference Rate</b>
1863 – 4 November 1935	Silver Standard	Silver dollars as legal tender
December 1935 – June 1972	Link to Sterling	£1 = HK\$16 (December 1935 – November 1967)
	Link to Sterling	£1 = HK\$14.55 (November 1967 – June 1972)
6 July 1972	Link to the US dollar with $\pm 2.25\%$ intervention bands around a central rate	US\$1 = HK\$5.65
14 February 1973	Link to the US dollar	US\$1 = HK\$5.085
25 November 1974	Free float	Exchange rates on selected dates US\$ = HK\$4.965 (25 November 1974) US\$1 = HK\$9.600 (24 September 1983)
17 October 1983	Link to the US dollar	US\$1 = HK\$7.80

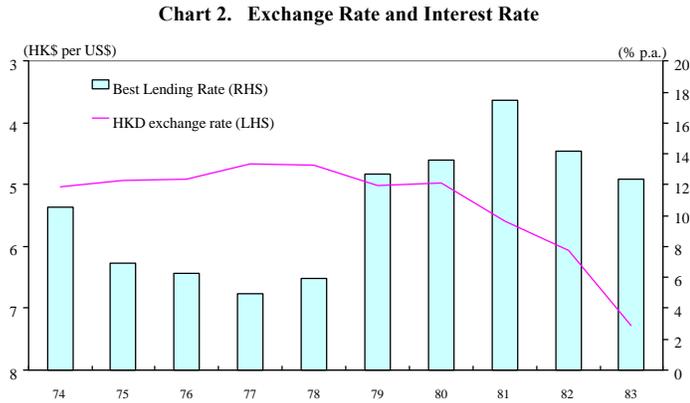
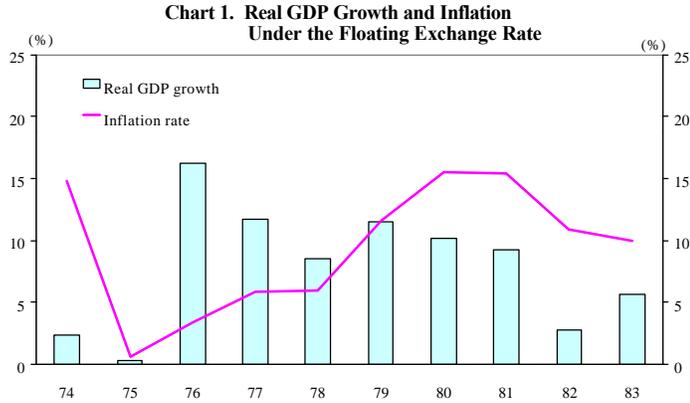
It would be incorrect to attribute all the problems in the latter half of this period to the floating exchange rate regime. A fundamental flaw of the system was a lack of an effective monetary anchor. The monetary policy objective was not clearly defined, let alone the instruments to implement it. The government had no control over the supply of interbank liquidity or interest rates. Piecemeal measures were introduced in early 1980s in an attempt to curb excessive credit and monetary creation, such as allowing the Exchange Fund to borrow from the interbank market, and a more stringent liquidity requirement for interbank deposits and those placed by the Exchange Fund.<sup>3</sup> But they had limited effectiveness, and the government mainly resorted to moral suasion to influence retail deposit rates set by the Hong Kong Association of Banks, which were adjusted upwards eight times in 1980 and 1981.

The immediate cause precipitating the meltdown of the floating exchange rate regime was the confidence crisis arising out of uncertainties surrounding Hong Kong's political transition. The burst of the property bubble, and nervousness about the health of a few banks that had over-extended to the property sector,

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<sup>3</sup> The Exchange Fund holds the bulk of Hong Kong's official reserves, and is primarily used to influence the exchange rate of the Hong Kong dollar.

aggravated the situation. The Hong Kong dollar plunged by around 15% within two days in September, triggering a panic among the public. To restore confidence in the Hong Kong dollar, the decision was taken to link the Hong Kong dollar at a fixed rate of HK\$ 7.80 to the US dollar. At the same time, the government announced the take-over of a problem bank to prevent a run on the banking system.



**III. THE LINKED EXCHANGE RATE SYSTEM AND REFORMS UNDERTAKEN PRIOR TO THE ASIAN FINANCIAL TURMOIL**

**a. Linked exchange rate system in the early days**

Linking to a single currency as compared to a basket of currencies has the advantages of simplicity, transparency and easy comprehension by the general public. The US dollar is an obvious choice, as the US is a major trading partner of

Hong Kong, and its currency is the predominant international currency in which a significant proportion of Hong Kong's trade is denominated.

The technical design of the linked exchange rate system was influenced by the institutional arrangements prevailing at that time. For historical reasons, currency notes in Hong Kong are issued by commercial banks, and not by the currency board. But note-issuing banks are legally required to hold non-interest bearing Certificates of Indebtedness (CI) issued by the Exchange Fund to provide backing for banknote issuance. Furthermore, before December 1996, banks maintained their clearing accounts with a commercial bank - the Hongkong and Shanghai Banking Corporation Ltd (HSBC). In other words, the clearing balances of the banking system were not on the currency board's balance sheet.

As CI was the only monetary base component on the balance sheet of the currency board, it naturally became the fulcrum upon which the linked exchange rate of 7.80 was applied. Specifically, CIs are issued to, and redeemed from, the note-issuing banks at a fixed rate of 7.80, and the same rate was extended to banknote transactions between the note-issuing banks and other banks.<sup>4</sup>

In the foreign exchange market, the exchange rate continued to be determined by forces of demand and supply. There was a general belief in the market that the theoretical possibility of banknote arbitrage would keep the exchange rate close to 7.80. In practice, such arbitrage did not function effectively. Banknotes are used as a medium only for small value transactions, and it would be cumbersome to move large quantities of banknotes around for arbitrage purposes. Moreover, under the then existing arrangements, banks, unlike depositors, could not directly convert their deposits (referring to clearing balances here) into banknotes, or vice-versa. Banknote arbitrage would have to involve a highly convoluted process requiring co-operation between a bank (which could make use of the fixed rate of 7.80 for banknote transactions) and a non-bank entity (which could convert banknotes into deposits).

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<sup>4</sup> Because of the problem of banknote handling charges (see footnote 5), banknote transactions between the note-issuing banks and other banks have been conducted against Hong Kong dollars since January 1994.

But even if arbitrage activities were attempted, they could easily be frustrated by banknote handling charges imposed by banks.<sup>5</sup>

At times when the exchange rate came under pressure, the government fell back on interventions in foreign exchange and money markets, not unlike other fixed exchange rate regimes. But neither were those operations very effective. As noted before, under the interbank clearing and settlement arrangements prevailing at that time, the ultimate settlement institution was a commercial bank – HSBC. There was no rule to govern the provision of liquidity to the banking system and subject it to the discipline of the currency board system. There was therefore a risk that the government's market operations could be undermined by activities of the HSBC and its customers.<sup>6</sup>

The inadequacy of the system was clearly revealed when a massive speculative inflow exerted significant strengthening pressure on the Hong Kong dollar in 1987 and early 1988. Constrained by a lack of effective control over interbank liquidity, the government resorted to a rather blunt instrument – the threat of negative interest rates. While it successfully fended off the speculation, there was clearly a need to introduce fundamental reforms.

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<sup>5</sup> Before January 1994, banknote transactions among banks were conducted against US dollars at an exchange rate of 7.80. As banks' balances and banknotes were not directly transferable into one another, a bank had to partner with a customer to conduct banknote arbitrage. Suppose the exchange rate in the TT market strengthened to 7.70. To take advantage of the arbitrage opportunity, a bank could buy US dollars in the TT market at this rate, and then exchange the US dollars for Hong Kong dollar banknotes at 7.80. As the banknotes could not be deposited to the bank's clearing account, it would have to seek the cooperation of a non-bank customer to deposit them with another bank, and subsequently transfer the deposit back by writing a cheque (such that the bank's clearing account would be credited by the amount of the deposits). Not only were the above procedures clumsy, but they did not alter the banks' aggregate clearing balances and thus overall HK\$ liquidity. As a result, arbitrage of this type did not affect the money market conditions that had led to the initial exchange rate pressures. What *did* happen was that banks who were net receivers of banknotes tried to recoup their exchange losses by imposing banknote handling charges, leading to customer dissatisfaction and eventual changes to the system.

<sup>6</sup> Suppose the exchange rate was weakening from 7.80 and the Exchange Fund sold US dollars for Hong Kong dollars to support the exchange rate and reduce interbank liquidity. If, at the same time, HSBC increased its lending to other banks, the clearing balances of the banks would increase, eroding the effectiveness of the Exchange Fund's operation.

**b. Reforms undertaken before the Asian financial turmoil**

Since 1988, a series of reforms in three broad directions were launched : (i) tightening the discipline in the management of interbank liquidity; (ii) setting up a mechanism for the provision of short-term liquidity assistance; and (iii) strengthening the institutional framework for monetary management.

(i) Management of interbank liquidity

A first step in this direction was the Accounting Arrangements between the Exchange Fund and the HSBC in July 1988, which in essence put a cap on the amount of interbank liquidity that the bank could create. The limit was set by the government, having regard to the fund flow situation and the prevailing market conditions. Operationally, HSBC was required to maintain an account with the Exchange Fund. There was an incentive system for the bank to manage the net clearing balances of the rest of the banking system at a level not exceeding the balance in its account with the Exchange Fund, which was determined by the government.<sup>7</sup>

On the occasion of the introduction of the real time gross settlement (RTGS) system in December 1996, the structure of the interbank payment and settlement system was revamped. Instead of settling their payments across the books of the HSBC, each bank directly maintains a clearing account with the Hong Kong Monetary Authority (HKMA, see (iii) below). The aggregate clearing balances of the banking system (termed as the Aggregate Balance) were for the first time firmly placed on the balance sheet of the currency board.

(ii) Provision of short-term liquidity assistance

Along with reforms to strengthen the control over interbank liquidity, the government has correspondingly assumed a greater role in providing liquidity assistance. Mainly to cushion occasional liquidity shocks and ensure the smooth

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<sup>7</sup> The Accounting Arrangements were terminated in December 1996 when HSBC relinquished its role as a settlement institution after the introduction of the RTGS system.

functioning of the interbank payment system, the Liquidity Adjustment Facility (LAF) was introduced in June 1992. Under this facility, banks that were short of Hong Kong dollar liquidity could use Exchange Fund paper and other eligible debt instruments as repo securities to obtain overnight funds, at an interest rate (termed as the LAF offer rate) that was set with reference to the US discount rate (and later changed to US Fed Funds Target Rate).<sup>8</sup> The LAF also had a deposit facility which allowed banks with surplus liquidity to deposit it with the Fund to earn the LAF bid rate. As the proceeds from the Exchange Fund paper had generally been switched into US dollars, the provision of short-term liquidity against those securities did not run counter to currency board principles.

(iii) *Strengthening the institutional framework for monetary management*

The HKMA was set up in April 1993 to strengthen the institutional arrangements for ensuring monetary and banking stability, and for promoting further development of the financial system. A factor that helped galvanise support for the establishment of the HKMA was the aborted move to raise interest rates to curb inflation in 1992. With inflation creeping up to a double digit figure in early 1990s, there were strong political calls to raise interest rates, in response to which the government tightened interbank liquidity; the retail deposit rates governed by the Hong Kong Association of Banks, as well as the best lending rate, were adjusted upwards by 1%. The conflict with the exchange rate objective was immediately evident: the Hong Kong dollar strengthened substantially away from the linked rate, which forced the government to unwind the interest rate hike a month later. The episode underlined the importance of shielding monetary management from political influence, and strengthening the institutional framework for delivering the objective of exchange rate stability.

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<sup>8</sup> The Exchange Fund bills and notes are issued by the Exchange Fund. The programme was introduced in 1990 to promote the development of the Hong Kong dollar debt market. The proceeds from the issuance of the paper are invested prudently, rather than being used to finance fiscal operations.

#### IV. EXPERIENCE DURING THE ASIAN FINANCIAL TURMOIL

The linked exchange rate system was put to a test in January 1995 when selling pressures on Asian currencies, including the Hong Kong dollar, increased in the aftermath of the Mexican crisis. But the speculation was short-lived. Exchange rate stability was quickly restored as interest rates increased.

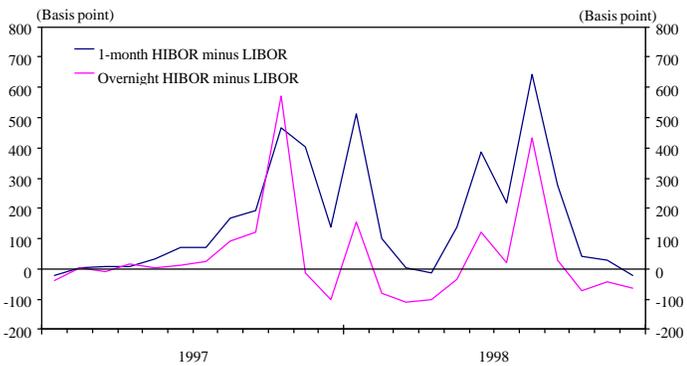
The real test came during the Asian financial turmoil in 1997. With regional currencies tumbling one after another, speculative attacks on the Hong Kong dollar intensified in October. As banks collectively sold to the HKMA more Hong Kong dollars than the balances in their clearing accounts, they faced a liquidity shortage when the foreign exchange transactions had to be settled. In order to prevent banks from using the LAF as a “backdoor” to obtain cheap Hong Kong dollar funding, the HKMA reminded banks to manage their interbank liquidity prudently, and warned them that the Authority reserved the right to impose penalty charges on repeated borrowers. Uncertain of the supply of liquidity, banks bid funds aggressively in the interbank market, driving overnight interest rate to over 300% at one time.

The liquidity shortage and the upsurge in interest rates, which was part of the automatic interest rate adjustment mechanism under the currency board arrangements, arrested the speculative outflow. However, the unprecedented magnitude of the outflow and interest rate hike also affected market psychology. Amid continued volatility in the external environment, banks generally increased their precautionary demand for liquidity, notwithstanding HKMA’s clarification of the definition of “repeated borrowers”. Increased liquidity demand, coupled with portfolio shifts out of the Hong Kong dollar, sustained the risk premium at a high level. The differential between Hong Kong dollar and US dollar interest rates, in terms of one-month rates, widened to an average of 230 basis points in the first half of 1998, compared with 20 basis points in the same period in 1997 before the crisis. Interest rate volatility similarly increased, with the standard deviation of one-month Hong Kong dollar interbank interest rate rising markedly from 0.42 percentage points to 2.9 percentage points in the same period (Chart 3).

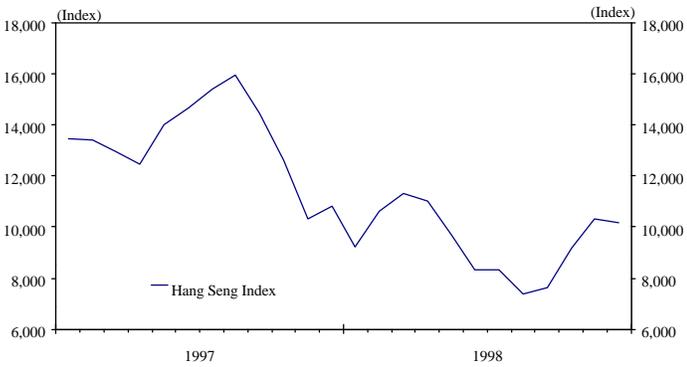
The predictability of the interest rate response to fund flows under the currency board system was exploited by some highly-leveraged speculators. They pre-funded themselves with fixed-rate Hong Kong dollars partly through currency swaps in connection with bond issuance launched by non-resident issuers. At the same time, they took short positions in the stock and futures markets. When unfavourable developments heightened market anxiety, these speculators sold Hong Kong dollars with the intention of shrinking the monetary base to drive up interest rates, so as to trigger sharp falls in stock prices (Chart 4).

The government responded to the cross-market plays by creating a degree of unpredictability – through an unprecedented operation in the stock and futures markets in August 1998 which involved stock purchases totalling HK\$118 billion (US\$15 billion). Although a sizeable amount, the operation did not affect the full backing requirement of the currency board system, as Hong Kong’s official reserves (contributed by cumulative earnings, transfers of fiscal surpluses and the monetary base) were more than three times the monetary base.

**Chart 3. Interest Rate Differential**



**Chart 4. Stock Market**



## V. TECHNICAL REFORMS TO STRENGTHEN THE CURRENCY BOARD ARRANGEMENTS

The HKMA followed through the stock market operation with a package of technical reforms in September 1998 to strengthen the resilience of the currency board arrangements. These reforms can be broadly categorised into three planks: (a) making the commitment to the link even more explicit; (b) revamping the mechanism for providing liquidity assistance and (c) further improving the transparency of the currency board arrangements.

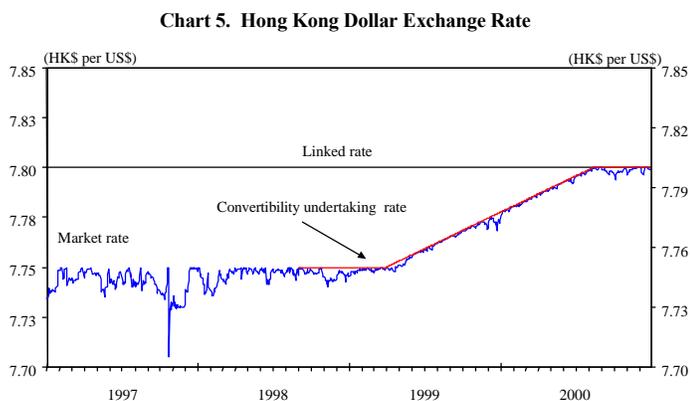
### a. Explicit commitment to the link

While the HKMA had always stood ready to buy or sell Hong Kong dollars against US dollars at a rate close to 7.80 to ensure exchange rate stability, the precise exchange rate levels at which it operated were not disclosed. It was believed that a small degree of unpredictability would increase uncertainty faced by speculators. However, experience during the crisis suggested that the discretion was more apparent than real. As the HKMA had been defending at the 7.75 level, a withdrawal from this level could possibly be misread by the market as a retreat from the linked rate. Moreover, at a time when confidence had been shaken by external and domestic shocks, the absence of an explicit commitment was not conducive to public confidence.

As part of the technical reforms, the HKMA has provided an undertaking to all licensed banks in Hong Kong to convert, at their initiative, Hong Kong dollar balances into US dollars at a prescribed convertibility rate. Taking into account the exchange rate prevailing at that time, the convertibility rate was set initially at 7.75. A 500-day transition took place between April 1999 and August 2000 when the rate was moved by 1 pip per day to converge to the linked rate of 7.80, where it has remained (Chart 5).

On the strong side of the link, the HKMA has continued to retain some limited discretion in determining the exchange rate level at which it sells Hong Kong dollars for US dollars. Operationally, it responds at its discretion to bank offers, taking into account prevailing market conditions. Market feedback suggests that there is little

worry about the HKMA's ability to defend against speculative attacks on the strong side. It is also believed that a small degree of uncertainty will make it more difficult for speculators to calculate the cost of speculation. Nevertheless, the pros and cons of a formal two-way convertibility undertaking are re-examined from time to time in the light of changing market conditions.



**b. Revamping the mechanism for providing liquidity assistance**

Experience during the crisis revealed the inadequacy of LAF in two aspects. First, it was mainly a mechanism to buffer liquidity shocks for the purpose of ensuring a smooth functioning of the interbank payment system. There was no built-in cushion to prevent an overshooting of interest rate response to portfolio shocks. Such a cushion would be useful to facilitate more orderly adjustments of interest rates to changes in the demand for Hong Kong dollar assets. The Aggregate Balance of the banking system has always been small, given the efficiency of the payment system and the absence of statutory reserve requirements. An outflow of funds could easily drain the pool of interbank liquidity, causing panic among banks. Secondly, while the HKMA had reserved the right to vary the LAF interest rates, conventionally, they had been set at fixed spreads from the US discount rate/Fed funds target rate. This explained the need to discourage repeated borrowers, particularly when the currency was under selling pressure.

In revamping the mechanism for providing liquidity assistance, the HKMA replaced the LAF by the Discount Window. Borrowing against Exchange Fund paper (which is fully backed by US dollars) is no longer subject to the repeated

borrowing restriction. The base rate for discount window borrowing is set with reference to a pre-announced formula that takes into account the US Fed funds target rate and Hong Kong dollar interbank interest rates. There is, in addition, a step-up structure under which individual banks that borrow in excess of 50% of their holdings of Exchange Fund paper are charged a higher interest rate. While seemingly complicated, this design aims at striking a fine balance between two objectives: ensuring the cost of discount window borrowing reflects the underlying fund flows situation on the one hand, and preventing excessive interest rate volatility on the other.

The outstanding amount of Exchange Fund paper currently stands at around HK\$110 billion, and is allowed to expand over time along with the interest payments on the paper. Putting aside roughly HK\$40 billion worth of paper that banks require for intra-day repos under the RTGS system, there is an estimated cushion of around HK\$70 billion. Although the effectiveness of the discount window has not been tested by shocks as severe as the Asian financial turmoil, simulations run on models suggest that interest rate hikes during the turmoil would have been much more moderate had this facility been in place. Official reserves would have shown larger declines, however.

**c. Enhancing the transparency of currency board operations**

To enhance the transparency of currency board operations, the HKMA publishes the forecast changes in the Aggregate Balance on a real time basis, the monetary base and its components on a daily basis, and the currency board account on a monthly basis. A Subcommittee on Currency Board Operations has been set up under the Exchange Fund Advisory Committee to oversee the currency board operations, and to recommend measures to further strengthen the currency board arrangements. The Subcommittee consists of members from the HKMA and the private sector, and the minutes of its meetings are published.

Table 2 below summarises the main features of Hong Kong's currency board arrangements, following the implementing of various reforms over the past years.

Monetary base components	Size (as at end-2000)	Convertibility	Remarks
Certificates of Indebtedness (CI)	HK\$99.3 billion	C.I.s are issued and redeemed against US dollars at a fixed rate of US\$1 : HK\$7.80.  Banknote transactions between note-issuing banks and other banks are conducted against Hong Kong dollar value.	The size of C.I.s is determined by public demand.
Aggregate Balance	HK\$0.7 billion (before discount window operations)	The HKMA has undertaken to convert Hong Kong dollar balances into US dollars a fixed rate of US\$1 : HK\$7.80.  On the strong side of the link, the HKMA sells Hong Kong dollar for US dollar in response to bank offers, subject to prevailing market conditions.	The size of the Aggregate Balance varies as the HKMA buys and sells Hong Kong dollars passively under the currency board account.
Exchange Fund Bills and Notes	HK\$109.3 billion	Exchange Fund paper is not directly convertible into US dollars, but on the maturity of the paper, the principal is credited to the clearing accounts of the banks concerned, which are convertible into US dollars.	The size of the Exchange Fund is allowed to expand only by the amount of interest payments on such paper, suggesting annual growth of around 6%.  Banks can use Exchange Fund paper as repo securities to obtain overnight liquidity from the discount window.

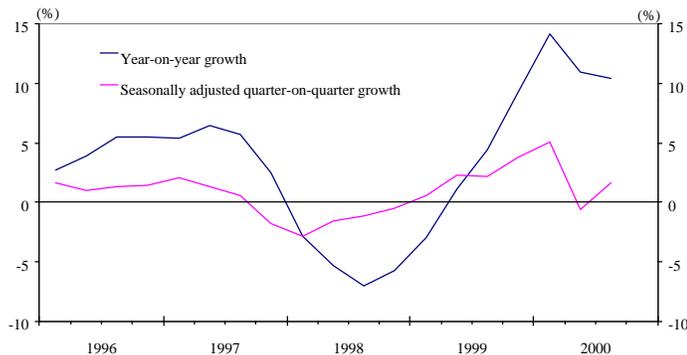
The government's stock operation in August, and the package of technical reforms implemented in September, effectively fended off speculative pressure and stabilized the monetary situation. Helped also by developments in the external environment, the Hong Kong dollar risk premium narrowed substantially in

1999, and largely disappeared in 2000. Interest rate volatility also declined significantly, from 2.84 percentage points in 1998 to 0.45 percentage points in 2000.

## VI. ECONOMIC ADJUSTMENT IN THE POST-CRISIS PERIOD

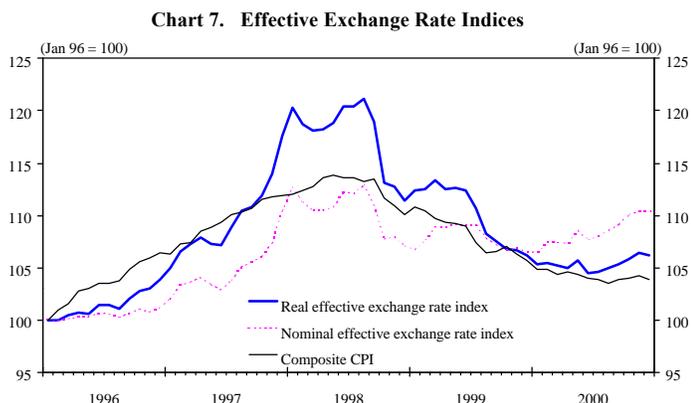
The return of monetary and financial stability has provided a sound foundation for economic activity to recover. Having experienced five consecutive quarters of negative year-on-year growth, the Hong Kong economy started to recover in the second quarter of 1999, and staged a distinct rebound in 2000, with real GDP growth of around 10%. Initially driving the recovery was an increase in net exports, resulting first from a compression of imports, and helped later by a revival in export demand. As the recovery has become more established, growth has broadened to domestic demand, with private consumption expenditure, and in more recent quarters, private investment, picking up from depressed levels in 1998 and early 1999. The unemployment rate has come down from a high of 6.3% early 1999 to the present 4.3%, although the latter is still considerably higher than the pre-crisis level (Chart 6).

Chart 6. Real GDP Growth



Economic adjustments under the fixed exchange rate system have come about largely through internal price/cost adjustments and productivity enhancements. Chart 7 shows the movement of real effective exchange rate, which provides a summary indicator of Hong Kong's price competitiveness. Real effective exchange rate appreciated by about 12% between June 1997 and January 1998, as a result of the weakening of the Japanese yen and sharp falls of regional currencies. From August 1998, the index began to edge down, helped not only by a rebound of yen and regional

currencies, but more importantly, by declines in domestic prices, which help restore competitiveness. In the following paragraphs, we examine the adjustment efforts of the corporate sector, developments in the banking sector and fiscal policies to support the economic recovery.



#### **a. Adjustment efforts of the corporate sector**

Labour costs account for more than one-third of the operating expenses of an average corporate in Hong Kong. Growth in nominal wages has slowed significantly after the Asian financial turmoil, even more sharply than in other Asian economies. However, wages in real terms have continued to show considerable increases due to deflation. A plausible explanation is that in streamlining their operations many firms have laid off unskilled workers and retained the higher value-added ones. This has contributed to an improvement in labour productivity, which grew by an average annual rate of 7% in the post crisis period. In comparison, other Asian economies registered labour productivity gains in the range of 1-7% (Table 3). Corporates have also benefited from significant reductions in rentals after the Asian crisis. Compared with their peak levels in the third quarter of 1997, rents for office, retail and residential premises have come down by 20% to more than one-third.

**Table 3. Growth Rates of Labour Productivity of Hong Kong and other Asian Economies**

*(Preliminary estimates)*

	Hong Kong	Korea	Malaysia	Philippines	Singapore	Thailand	Taiwan
(Average annual percentage changes, unless otherwise specified)							
Growth rate							
Pre-crisis	2.7	4.8	5.0	1.5	5.7	5.5	5.3
Crisis	-4.9	0.2	-8.0	-2.6	-1.4	-5.6	3.0
Post-crisis	<b>6.5</b>	<b>6.9</b>	<b>3.6</b>	<b>6.3</b>	<b>6.2</b>	<b>1.7</b>	<b>4.3</b>

Notes:

1. Labour productivity is defined as real GDP per person employed.
2. With the exception of Thailand, the crisis period is defined as from 1997Q4 to 1998Q4, while the pre-crisis period is defined to be from 1993Q1 to 1997Q3, and the post-crisis period from 1999Q1 to 2000Q3. The crisis period for Thailand is defined as from 1997Q3 to 1998Q4.

Having experienced higher interest rates and tightening credit during the Asian financial turmoil, many companies have undergone significant financial restructuring to adjust their liquidity and debt structure. Based on an analysis of listed companies (which excludes those in the financial sector), the average debt to equity ratio fell back to the pre-crisis level after a brief increase in 1998, as a number of firms used their earnings to repay debt. The share of short-term loans to total debt has also fallen, and liquidity positions, as indicated by the current and cash ratios, have improved. Compared with their Asian counterparties, the debt leverage ratio of Hong Kong companies has remained one of the lowest, and adjustments to improve the loan structure and liquidity positions have been achieved more swiftly (Table 4).

**Table 4. Liquidity Levels and Loan Structure of the Non-financial Sector of Hong Kong and other Asian Economies**

	Hong Kong	Korea	Malaysia	Philippines	Singapore	Thailand	Taiwan
<b>Current ratio</b>							
1996	1.45	1.21	1.32	1.61	1.76	1.20	2.14
1997	<b>1.57</b>	1.14	1.23	1.29	1.68	0.86	2.11
1998	<b>1.42</b>	1.20	1.14	1.40	1.69	0.89	1.75
1999	<b>1.52</b>	1.10	1.25	1.44	1.68	1.05	1.85
(# in sample)	(388)	(296)	(586)	(172)	(330)	(346)	(138)
<b>Liquidity ratio</b>							
1996	1.16	0.99	1.11	1.31	1.55	0.89	1.67
1997	<b>1.27</b>	0.95	1.02	1.06	1.45	0.65	1.67
1998	<b>1.12</b>	1.02	0.91	1.15	1.48	0.72	1.36
1999	<b>1.19</b>	0.91	1.04	1.20	1.50	0.87	1.50
(# in sample)	(388)	(296)	(586)	(172)	(330)	(346)	(138)
<b>Cash ratio</b>							
1996	0.47	0.28	0.43	0.49	0.82	0.19	0.69
1997	<b>0.60</b>	0.26	0.38	0.40	0.58	0.16	0.76
1998	<b>0.52</b>	0.27	0.35	0.38	0.68	0.23	0.53
1999	<b>0.62</b>	0.18	0.44	0.44	0.71	0.37	0.56
(# in sample)	(387)	(295)	(584)	(171)	(313)	(346)	(138)
<b>ST loan/Total loan (%)</b>							
1996	34.8	48.0	48.9	39.7	40.1	39.3	52.5
1997	<b>31.0</b>	47.7	46.9	37.1	38.3	42.9	49.7
1998	<b>31.4</b>	41.4	43.4	29.7	34.4	48.5	48.6
1999	<b>28.2</b>	42.3	42.8	27.4	35.6	40.2	42.4
(# in sample)	(356)	(284)	(519)	(126)	(274)	(318)	(131)

**Notes:**

1. The study only covers listed non-financial institutions on the stock exchanges.
2. The sample size varies over time. The reported numbers of companies are for 1999 only.
3. Current Ratio = Current Assets/Current Liabilities.
4. Liquidity Ratio = Current Assets (excluding Inventory)/Current Liabilities.
5. Cash Ratio = (Cash + Marketable Securities)/Current Liabilities.

Source: Compiled by HKMA, based on Primark's database for company analysis.

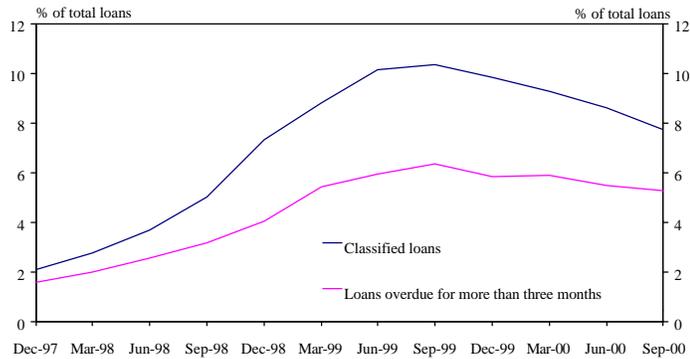
## **b. Banking sector developments**

The banking sector also faced severe challenges during the Asian turbulence. Nevertheless, helped by a sound supervisory regime, banks have remained very healthy, maintaining a high capital adequacy ratio of around 18% (compared with the Basle standard of 8%) and a liquidity ratio of well above 40% (compared with the statutory requirement of 25%) throughout.

Under the linked exchange rate system, banks in Hong Kong are more prone to interest rate variability caused by volatile capital movements. Moreover, there may be periods when economic cycles in Hong Kong and the US are not in sync with each other. Hence, interest rate movements, which follow those in the US, may not be entirely appropriate for economic conditions in Hong Kong. This risks exacerbating asset price fluctuations, and demands a more forward-looking approach in our prudential supervisory framework. In respect of residential mortgages, for instance, banks progressively reduced the maximum loan to valuation ratio from 90% to 70% in early 1990s, when the property market was booming. This has helped to contain the damage to banks when residential property prices plunged by 50% after the crisis. The ratio of overdue residential loans did edge up considerably from the pre-crisis level of 0.1% to 1.3% in September 2000, but is still a very low level.

Chart 8 shows the overall asset quality of the banking sector. The ratio of loans overdue for more than three months to total loans of locally incorporated banks peaked at 6.3% in the third quarter of 1999, and has come down to 5.3% in the third quarter of 2000, along with a distinct rebound in economic activity. Likewise, banks' profits, which dropped in 1998 and the first half of 1999 as a result of write-off and provisioning, have shown significant improvements since the first half of 2000.

**Chart 8. Asset Quality of the Banking Sector**

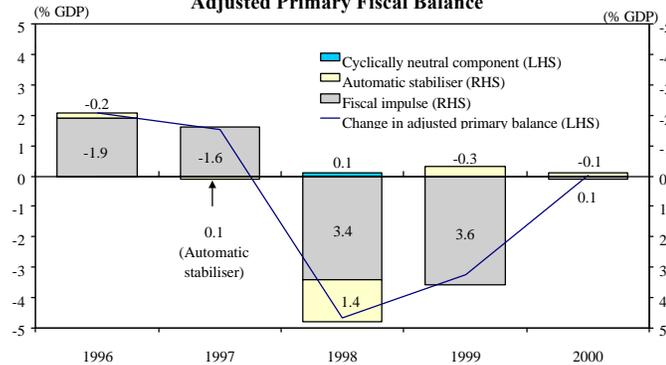


**c. Fiscal policy in the post-crisis period**

Fiscal policy has come to the forefront in the policy package for economic recovery, as there is little room for manoeuvre on the monetary policy front. From a surplus of 6.6% of GDP in FY 1997, the budget swung into a deficit of 1.8% in FY 1998, as government expenditure was raised to partly offset the contraction in private demand, while tax revenue declined as a result of tax concession measures and falling incomes. It unexpectedly returned to a small surplus of 0.8% of GDP in FY 1999 owing to higher investment returns on fiscal reserves, but is projected to be in deficit again in FY2000.

To better ascertain the underlying policy stance, we have attempted to purge observed fiscal data of cyclical effects and other factors (including asset transactions and investment returns) that distort the relationship between the fiscal balance and aggregate demand. Our estimates suggest that the fiscal impulse has raised GDP growth by approximately 1½% both in FY1998 and 1999 (Chart 9).

**Chart 9. Decomposition of Changes in Adjusted Primary Fiscal Balance**



While sizeable cumulative fiscal reserves (roughly equivalent to 35% of GDP) have given the government considerable latitude in pursuing an expansionary policy, the budget strategy has to take into account the sustainability of fiscal position in the medium term, particularly as prudent fiscal management is an important factor underpinning the credibility of the linked exchange rate system. Moreover, there is a requirement in the Basic Law that Hong Kong should “follow the principle of keeping expenditure within the limits of revenues in drawing up its budget, and strive to achieve a fiscal balance, avoid deficits and keep the budget commensurate with the growth rate of its gross domestic product”.<sup>9</sup> Furthermore, care is needed not to further narrow the tax base, especially in view of the ageing population. With these considerations in mind, many of the tax concession measures implemented in the past years took the form of one-off tax rebates. The government medium-range forecast projects a return to a small surplus in FY2001. This seems plausible given the strong economic recovery, as well as the dissipation of the temporary tax concession measures.

## VII. CHALLENGES AHEAD

The speed and strength of the economic recovery is testimony of the ability of the economy to adjust to shocks. In fact, since the adoption of the linked exchange rate system, the economy has been performing well, with an average annual

<sup>9</sup> See article 107 of the Basic Law of the Hong Kong Special Administrative Region.

real GDP growth of 5% and inflation of 6%.<sup>10</sup> The flexibility of the economy, coupled with a sound financial system, fiscal prudence and deep foreign currency reserves, constitutes the core elements that underpin the sustainability of the linked exchange rate system.

Notwithstanding the exceedingly strong performance in 2000, the economy continues to face a number of challenges. The unemployment rate will likely take some time to return to the pre-crisis level. The demand for upgrading unskilled workers has grown even stronger, as the pressure of economic restructuring has intensified with a further opening up of the Mainland China. While consumption and investment have rebounded from the low levels in 1998, they are still roughly 3% and 17% respectively below the pre-crisis levels. Sentiment has been affected by continued weakness in the property market. Likewise, domestic loans only started to register modest year-on-year increases since the latter part of 2000 owing to subdued demand. Externally, the slowdown in the growth of overseas markets will negatively impact our trade performance. But, on the positive side, economy activity is likely to benefit from monetary easing following the US interest rate cuts. Furthermore, China's accession to the World Trade Organisation is expected to stimulate trade activity and the demand for business services in Hong Kong.

The monetary sector has been very stable over the past year, despite renewed jitters in some of the regional financial markets. However, as a small open economy, Hong Kong remains subject to the risks of volatile capital flows. While the present currency board arrangements have been operating well, we will, in the light of changing market conditions, review the need for further refinements to enhance its robustness.

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<sup>10</sup> A study by Mark Crosby suggests that the currency board period has been one of relatively low volatility in Hong Kong, even after controlling for the level of external volatility. See Crosby, Mark (2000) "Exchange rate volatility and macroeconomic performance in Hong Kong" HKIMR Working Paper No. 3/2000.