HONG KONG INSTITUTE FOR MONETARY RESEARCH

RULES VERSUS DISCRETION IN MANAGING THE HONG KONG DOLLAR, 1983-2006

Tony Latter

HKIMR Working Paper No.2/2007

January 2007

Rules versus discretion in managing the Hong Kong dollar, 1983-2006

Tony Latter[1]
Hong Kong Institute for Monetary Research

January 2007

Abstract

This paper examines the way in which Hong Kong's currency board has operated since its re-introduction in 1983. It discusses currency board design and the extent to which Hong Kong has conformed to particular principles. The core of the paper is an assessment of the rules-versus-discretion question. From 1983 to 1988 the currency board convertibility obligation applied, in effect, to physical cash only. Arbitrage could not be relied upon to ensure that the market rate converged to 7.80, so intervention – mostly in the foreign exchange market – played a significant role. In 1988 the authorities acquired the means to apply currency board principles also to the reserve balance of the banking system, but over the next ten years they did not exploit that to full advantage in the currency board context. They gave no convertibility promise for the reserve balance and seldom allowed foreign exchange transactions to trigger currency-board-type adjustment. They concentrated instead on managing bank liquidity or interest rates, very often via money market intervention, albeit subject to the overriding goal of a stable exchange rate. But the range which defined that stability was never revealed. Although this exercise of discretion and the departures from strict currency board principles were not obviously damaging, they may have complicated official procedures unnecessarily, and may have raised doubts as to the authorities' long-term commitment to 7.80. In other words, rather than helping to settle markets, the tactics may at times have disturbed them. Reforms in 1998 included a weak-side convertibility undertaking for banks' reserve money at 7.80 (after transition), but left strong-side intervention to the discretion of the Monetary Authority. It was only in 2005 that a firm strong-side undertaking was introduced at 7.75, with the weak side bound being moved to 7.85 in order to provide symmetry. Now, only one minor element of discretion – for intrazone intervention – remains. Whereas discretionary interventions were probably very necessary in the early years after 1983, the authorities could have moved more quickly after 1988 to reach the almost completely rule-based status of today. But the stability of the exchange rate over the entire period speaks for itself, and it is not obvious that stricter adherence to currency board principles would have delivered a materially different outcome.

---

[1] The author is a senior research fellow of the Hong Kong Institute of Economics and Business Strategy. Previously, he was Visiting Professor at the University of Hong Kong, 2003-05; Deputy Chief Executive of the Hong Kong Monetary Authority, 1999-2003; and Deputy Secretary for Monetary Affairs in the Hong Kong government, 1982-85. He is grateful to the HKIMR for the award of a research fellowship to work on this paper. He is grateful to John Greenwood for helpful comments; to Kitty Lai, Grace Lau and James Lau for their recollections of events covered in the paper; and to Dickson Tam for preparing the charts. He also acknowledges helpful remarks from an anonymous referee. The author remains responsible for any errors of fact.

1. Introduction

This paper is concerned with Hong Kong's exchange rate regime, as it has functioned from 1983 to the present day. The regime has variously been described as a link, a peg, and a currency board. For convenience, this paper takes these terms to be synonymous, and therefore elects to call the regime a currency board throughout the period. It is acknowledged, however, that some purists would argue that the regime has not always fulfilled all necessary conditions to be classified as such.

What is incontrovertible, from the evidence, is that the arrangements, however they may be described, have been remarkably successful in their primary objective of keeping the exchange rate stable at around US$1=HK$7.80. Since July 1984, the rate has never diverged from 7.80 by more than 1%.

The focus of the paper is the question of 'rules versus discretion'. In essence, how much of the observed exchange rate stability has been the result of the prevailing currency board rules themselves, as amended from time to time by the authorities, and the automatic adjustment processes arising from them; and how much has, by contrast, been achieved only by the instrument of official market interventions of a discretionary nature? Following on from that, the paper considers whether the exercise of discretion has been a *necessary* factor in attaining that exchange rate stability. (See Box A, P. 24)

The paper has been motivated in part by remarks which have been made on occasions over the years suggesting or asserting that Hong Kong does not have a proper currency board, that the purity of the concept has been threatened or actually compromised by the exercise of other central banking functions, that discretionary actions by the authorities can only serve to undermine monetary stability, and so forth.

For instance, writing in 1988, just after the authorities had acquired the means to influence the liquidity of the banking system, Greenwood said:

> "Any shift from a system of rules to a system of discretionary intervention must be regarded with circumspection";[2]
>
> and, almost a year later:
>
> "…since July 1988 the Exchange Fund has been operating more like a central bank than a passive colonial currency board.";

[2] *Asian Monetary Monitor*, July-August 1988.

then, commenting on the announcement of a programme of issuance of Exchange Fund bills:

> "It seems likely that Hong Kong will move to a system of regular discretionary intervention in the domestic money market and/or in the foreign exchange market. Once this is accomplished later this year it will no longer be possible to claim that Hong Kong does not have a central bank. Judged strictly from the standpoint of the conduct of monetary policy, this development will take Hong Kong even further down the path towards full-scale central banking."[3]

Friedman contributed to this debate when, at a conference in 1993 to mark the tenth anniversary of the link and the establishment of the Hong Kong Monetary Authority, he made a thinly veiled criticism of the creation of an institution looking more like a central bank than a currency board.[4] More recently, Hanke declared that the HKMA was not a currency board, in a tone suggesting that it was a sin not to be one.[5] In fact, no one ever claimed that the HKMA was itself a currency board; the important feature of Hong Kong's arrangement is that the HKMA operates a currency board regime within a wider set of functions and responsibilities. These wider duties may, taken altogether, indeed brand the HKMA institutionally as a central bank, but that does not necessarily undermine its discrete currency board function.

Prompted by such considerations, Section 2 provides a somewhat semantic discussion of the concept of a currency board and the delineation of rules from discretion. Section 3 summarises the historical background to the re-introduction of the currency board to Hong Kong in 1983. Section 4 divides the period 1983-2006 into five sub-periods, each covering a slightly different regime phase. For each subperiod it describes the significant additions or changes to the monetary regime which are relevant to the rules-versus-discretion debate and which characterise the phase, before reviewing the behaviour of the exchange rate and the strategy pursued by the authorities. Section 5 draws together some conclusions about the use of discretion and its consequences.

2. The concept and rules of a currency board

The modern currency board has its origins in British colonies. They came to adopt it quite widely in the nineteenth and twentieth centuries. It was an administratively simple and financially efficient mechanism for ensuring an adequate supply of local currency notes and coins in a colony, solidly backed against sterling (mostly invested in British government securities) at a fixed rate.

By replacing the metropolitan currency with its own, the colony also benefited in three other ways:

(a) The arrangements ensured that the colony, rather than the metropolitan authority, was the financial beneficiary of any loss or accidental destruction of currency within the colony.

---

3 *Asian Monetary Monitor*, May-June 1989. This, and other relevant texts from *Asian Monetary Monitor*, authored principally by John Greenwood, are shortly to be published in a single volume by the Hong Kong Institute for Monetary Research. It should be noted that the quotes here are from contemporary analyses produced very close in time to the events in question, which should be seen in the context of the mood of the times. In the forthcoming volume Greenwood adds some new reflections on the earlier analysis.

4 "Do We Need Central Banks?", Milton Friedman in "Monetary Management in Hong Kong", HKMA 1993.

5 In "On dollarisation and currency boards: error and deception", *Policy Reform*, 2002, vol 5(4).

(b) They ensured that the colony did not have to wait months before receiving value for used notes, as they lay idle during transportation back to the issuer.

(c) They ensured that the colony earned the seigniorage on the issue,[6] albeit after having to meet the production costs itself.

In those historical cases, the physical currency was the sole monetary liability of the currency board. Most banking transactions would have been conducted in sterling, so there was seldom any very compelling need to develop financial markets in the local currency, or therefore to set up clearing arrangements in the local currency which could, if settlement was conducted through accounts with the monetary authorities, give rise to an additional form of official reserve money. If an increasing amount of local business and banking came to be denominated in the local currency, as it certainly did in Hong Kong over the years, then a banking structure for the local currency would emerge.

There was a natural tendency for the exchange rate between the local currency and the anchor currency to hold close to the fixed rate which had been set for notes and coin. In other words, the whole economy was seen to function at that fixed rate. Until the time came when a colony began to talk about monetary independence and establishing its own central bank, there was scarcely the slightest doubt that the colony's currency would remain at its fixed rate.

Because the currency board, as practised today in Hong Kong and a few other places, is somewhat different from the simple colonial version – most notably because the monetary base to which the convertibility rules apply now includes the reserve money of the banking system – there is some confusion as to what constitutes the strict or pure model. In fact, there is no unequivocal definition. Currency boards did not feature in the Ten Commandments or the Sermon on the Mount; nor did Newton discover a Fourth Law which prescribed the mechanism. One might be inclined to take an entry in Palgrave as authoritative, but even there Alan Walters, after noting the initial colonial cash-only model, tends to sidestep the matter of the current definition.[7]

Where do the definitional uncertainties arise? It may be sufficient to provide four examples.

(a) First, under the simple sterling-based arrangements referred to above, the question of the convertibility of banks' reserve money balances did not arise, essentially because the financial systems had not yet reached that stage of development. The currency board was based only on physical currency; it was not involved in interbank settlement; the metropolitan authorities were effectively in charge of wider monetary and economic issues. That leaves one in a quandary as to whether the 'pure' model should only embrace cash, or whether, because cash was in the early

6 If, for example, sterling notes were used in the colony, they had to be bought from the Issue Department of the Bank of England with funds which would then be invested to earn a profit for the Bank of England. When a colony issued its own notes, the local colonial administration would itself earn the profit from the sterling investments which it held as backing. Such a profit is known as seigniorage.

7 *Palgrave Dictionary of Economics*; the entry on currency boards is contributed by Alan Walters.

days equal to monetary base, and because monetary base now includes banks' balances, a currency board must necessarily adopt the wider coverage. This was a particularly relevant consideration in Hong Kong's experience post-1983, since for much of the time it operated the cash-only model.

(b) The second example is the stock-flow controversy. Does the pure model require only the stock of currency to be fully backed (in which case any excess foreign reserves provide scope for issuance of extra money at will), or does it require only that *changes* in the monetary base are matched exactly with *changes* in foreign reserves? Is one or the other sufficient, or are both necessary? This does not seem to be an issue that was ever discussed in the early days of currency boards. Passing the stock test was all that was necessary to get the regime started, but the flow rule could have been a useful additional discipline, and perhaps a necessary one, for the sake of prudence, in a situation of surplus reserves (again of relevance in the Hong Kong context). The answer perhaps needs to be based more on pragmatism than on dogma.[8] Hong Kong has tended to adopt the stance that both conditions should apply; this was confirmed in the most formal sense in a letter from the Financial Secretary to the Monetary Authority in 2003.[9]

(c) The third example relates essentially to the institutional framework within which the currency board operates. The purists would argue that a currency board should be a stand-alone body with a balance sheet comprised solely of the monetary base and the foreign currency which backs it. But in Hong Kong the Exchange Fund, which was the original balance sheet when a currency board was first introduced in 1935, had its ambit extended over the years – most significantly as the repository for budget surpluses. But that did not preclude it from continuing to serve the currency board, provided that the stock and flow rules were observed in respect of the monetary base. In fact, since 1999 the balance sheet of the Exchange Fund has been presented on a segregated basis, with a currency board sub-account to demonstrate compliance with currency board principles.

(d) Finally, there is the question of sterilised intervention. A fundamental principle of the currency board is that the change in the monetary base arising from an official foreign exchange transaction in response to an external inflow or outflow must not be reversed by open market operations or interbank activities carried out by the central bank or currency board. In short, there must be no sterilisation in those particular circumstances. But that does not preclude the government or its agencies from being involved in sterilised intervention from other sources, when foreign currency is exchanged independently of the monetary base or its backing. Particular confusion may arise if, as in the case of Hong Kong, the same agency or balance sheet is both the guardian of the currency board and the conduit for sterilised intervention. In fact, neither the regular investment or drawdown of fiscal reserves, which are held and managed by the Exchange Fund and frequently involve foreign exchange transactions, nor the purchases of shares on the stock market by the Exchange Fund during the 1998 crisis (and their subsequent sale), have impacted in any way on the currency board account. The strict rules have not been broken.

---

8 For a fuller discussion of this issue, see Corrinne Ho, "A survey of the institutional and operational aspects of modern-day currency boards", BIS working paper 110, March 2002.

9 The letter, dated 25 June 2003, which clarified the demarcation of a range of responsibilities between the Financial Secretary and the Monetary Authority, can be found on the HKMA website.

Thus, a disciplined currency board does not necessarily require a separate institution with a dedicated balance sheet. It does not require that the authorities, in the widest sense of the word, never conduct any sterilised intervention. However, the main delineations of a currency board – the fixed rate, the principle of foreign currency backing (even if the stock-flow issue has not been conclusively resolved), the ban on the central monetary authority lending money to the government or the banks unless properly secured by foreign assets, and so on – are all clear enough. It also seems logical that the convertibility rule should apply not just to cash but to all monetary liabilities of the monetary authorities, whatever they may include.

3. Hong Kong: the historical context

Hong Kong's present-day economy has its origins in the colonisation of Hong Kong by Great Britain in the mid-19th century, as a key trading link to China. Before the rulers had much time to think about monetary matters, the traders found it convenient, not unnaturally, to base their business on the monetary system which operated on China. That was the silver standard. When Hong Kong introduced its own currency, it was therefore based on silver – silver coinage, and banknotes which were exchangeable for silver. Broadly speaking, this was the system which prevailed through to 1935. At that point China abandoned the silver standard. Hong Kong followed suit and shifted to what was described at the time as a managed currency. This emerged, however, in practice, as a currency board based on sterling.[10]

After an interruption associated with the Japanese occupation of Hong Kong during the Second World War, the sterling-based currency board continued.

The success of such an arrangement, and its acceptability to local people and businesses, depend to a considerable extent on the anchor currency being reasonably stable. Hong Kong was tied to the fortunes of sterling. Already in 1967, when sterling devalued, Hong Kong chose not to follow sterling down, but to re-peg at a new rate which maintained the previous cross-rate against the US dollar.

Then in June 1972, a sterling crisis – the second in the space of five years – led to a substantial loss of purchasing power for Hong Kong's international reserves, which were almost entirely sterling-denominated, and to a depreciation of the Hong Kong dollar against non-sterling currencies which Hong Kong's own economic performance did not warrant. Hong Kong decided to cut its link with sterling. At the same time it abandoned the currency board framework.

It is questionable how great a contribution to monetary stability had been made by the currency board mechanism *per se* up to 1972, given that it applied only to the physical currency. After all, this basis was not found to be a sufficient mechanism post-1983 (see below). Perhaps its success can partly be ascribed to the fact that it had been a long-standing arrangement with a powerful psychological effect.

After the abandonment of the currency board anchor in 1972, there was no alternative framework within which the authorities, without a central bank, could operate an effective, discretionary monetary policy.

10 For a fuller historical account, see "Hong Kong's exchange rate regimes in the twentieth century: the story of three regime changes", Tony Latter, Hong Kong Institute for Monetary Research working paper no.17 of 2004 – www.hkimr.org.hk

Monetary stability became dependent more than ever on the actions of the major banks, notably HSBC. It also required that the psychological aura of monetary matters being well under control be sustained. For as long as the banks' interests and objectives were broadly coincident with those of the government, that formula seemed to deliver satisfactory results.

Thus this partnership worked well enough for some ten years. Then in 1983 there was a crisis of confidence in Hong Kong and its currency, sparked by the instigation of discussions between the British and Chinese governments on the future of Hong Kong beyond 1997. The HK dollar began to depreciate steeply. The banks did not feel that they could risk the funds of their depositors or shareholders by supporting the currency any further.

Because Hong Kong still had no central bank, nor therefore the necessary institutional infrastructure to operate a conventional monetary policy, the only means quickly available, with any prospect of restoring even a modicum of stability, was a return to the discipline of the currency board. (See Box B, P. 25)

In October 1983 a currency board was therefore re-established, on this occasion against the US dollar rather than sterling, at the rate of US$1=HK$7.80. That is the system which, with a number of subsequent refinements, endures to the present day.

4. Monetary management in practice

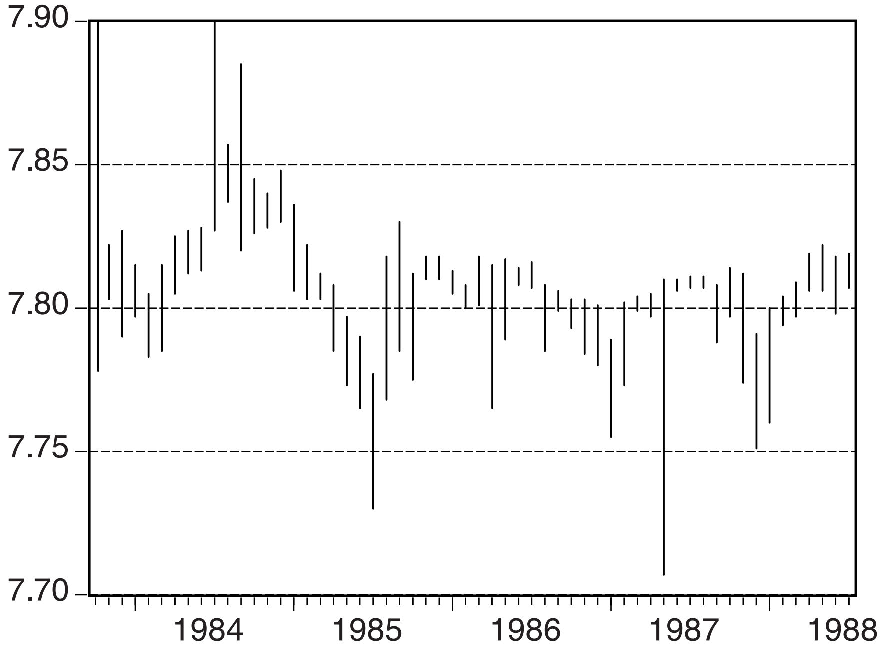
For the purposes of this paper, the period from 1983 to the present can be conveniently broken down into five sub-periods, each reflecting a revised operating strategy.[11] This section reviews the strategy and operational experience in each successive subperiod. (See Box C, P. 26)

<u>October 1983 – July 1988</u>

Within a few weeks of the re-introduction of currency board arrangements the exchange rate had settled down close to 7.80. Apart from a subsequent bout of pressure which drove the rate to 7.90 in July 1984, the rate was never significantly beyond 7.82 on the weak side. Strong-side variance was somewhat wider but, with rare exceptions, appeared to be capped at 7.75.

[11] The scope of the commentaries which follow is partly constrained by the limited availability of information. Prior to July 1988 no regular statistics on monetary operations were released, and even after that the information was for many years somewhat sporadic and incomplete. Before the Monetary Authority, established in 1993, began its *Quarterly Bulletin* (the first of which appeared in November 1994), the main source of information was the government's *Economic Reports* (which appear variously as *Economic Background, First Quarter Economic Report, Half-year Economic Report* and *Third Quarter Economic Report*). Since November 1994 the HKMA *Quarterly Bulletin* has included regular chapters on monetary operations. Moreover, in more recent years the minutes of the Exchange Fund Advisory Committee's sub-committee on the currency board have been published, together with the monthly review of currency board operations prepared for that committee. These are reproduced in the *Quarterly Bulletin*. All of this HKMA material can be accessed via its website.

HK$-US$ exchange rate
lowest-highest spread per month
17 October 1983 to 16 July 1988



When the currency board system was re-introduced in October 1983, the arrangements were simple. Certificates of indebtedness (the obligatory backing for the commercial banks' banknote issue and therefore synonymous for most analytical purposes with the physical currency) would be bought and sold by the Exchange Fund only against payment in US dollars at the rate of 7.80. Beyond that, the authorities retained the capacity to intervene in the foreign exchange and money markets. But that capacity did not include unsterilised intervention. This was because the Exchange Fund did its banking with the banks; it did not itself provide any banking services to the banks; and the payments system continued to function on the basis of settlement in commercial bank money.

So, in this period the currency board was functioning in the most basic colonial format, applying to physical cash only. But the circumstances were quite different from those of the colonies further back in history. In those cases, no one had ever experienced an independent currency, and the change encountered on adopting the currency board was simply the shift from use of metropolitan notes and coin to use of a separate physical currency, backed 100% by the metropolitan one.

By contrast, Hong Kong already had its own currency, which had been floating independently for a decade, and a relatively sophisticated banking and financial system based on that currency. The idea that the market exchange rate would dutifully fall in line with the rate for conversion of certificates of indebtedness may be thought of as having been rather fanciful. Admittedly, in the period up to 1972 the market rate had kept to the conversion rate for certificates of indebtedness without much trouble, but this was helped progressively by the psychological effect of the continuing sterling link itself, and by the underdevelopment, in comparison to later years, of financial markets. In those circumstances the durability of the rate had scarcely been challenged.

In the 1980s, however, people were more familiar with the power of market sentiment, and with its prevailing (or, at least, recent) fragility in the Hong Kong context. The argument that arbitrage between banknotes and the wholesale foreign exchange market would bring about convergence of the two exchange rates was little more than an article of faith, given the high degree of segmentation between physical currency circulation and other monetary or financial transactions, and given that only two banks had direct access to the convertibility undertaking.

If market exchange rates became significantly stronger than 7.80, the note-issuing banks would, given the likelihood of secular growth in currency demand, reap a profit (being able to purchase US dollars at, say, 7.75 in order to buy certificates of indebtedness at 7.80). There would be no incentive for them to eliminate the discrepancy. If the market rate was persistently weaker than 7.80, the note-issuing banks might either simply accept the consequent exchange loss (as the price of retaining the undoubted status and publicity associated with being a note-issuer), or seek to contain that loss by rationing notes or imposing handling fees, rather than attempting to stem demand for physical currency by raising interest rates – which would be the required adjustment process according to the currency board model. Banks might have concluded, probably correctly, that raising interest rates would have rather little impact on currency demand, whereas it might cause some damage to other areas of their business.

At the inception of the arrangements in October 1983, the note-issuing banks agreed with the other banks that the former would supply (or take back) notes to (or from) the latter also only in exchange for US dollars at the rate of 7.80. There were some who believed that, by opening an additional channel for arbitrage (at the expense of the note-issuing banks), this would assist the convergence process. However, such hopes again encountered the obstacle that, since there was no statutory obligation on the note-issuing banks to supply or redeem notes in unlimited quantities, they could simply ration the amounts in order to protect themselves from arbitrage losses. This aspect of the arrangements is further elaborated in Box D.

In view, consequently, of the probable stickiness of the arbitrage processes, it was suggested by some observers that convergence of the market rate to 7.80 could be better assured if wider access was permitted to the 7.80 'window' – for instance, by allowing everybody access to the Exchange Fund for the purpose of switching between HK dollar banknotes and US dollars at the 7.80 rate.[12] This would, *a priori*, have assisted the arbitrage process and have led, for example, to a speedier upward adjustment of interbank rates in the event of currency weakness. But, if adverse speculation nevertheless persisted in the foreign exchange market, the situation would probably have induced the same ultimate defence by banks, of rationing notes, without achieving the desired convergence of the market rate to 7.80, and with the unwelcome side-effect that the stability of some smaller banks might have been threatened on the way.

---

[12] See "Why the HK$/US$ linked rate system should not be changed", *Asian Monetary Monitor* Nov-Dec 1984.

That option was never pursued. In practice, the authorities needed to continue with active intervention. There are no statistics available on the scale of such intervention, but circumstantial and anecdotal evidence suggest that it was significant.[13] The authorities have never denied that intervention was in fact a key factor. The lack of transparency at the time, concerning official operations, was probably accounted for by the fact that the authorities did not wish to admit that the much-vaunted automatic adjustment process of the textbook currency board could not be entirely relied upon in practice. They preferred to give the impression that the rate was guided towards 7.80 by arbitrage.

During this phase, intervention was conducted mainly in the foreign exchange market but also, at least in the early stages, in the money market in accordance with a scheme agreed with HSBC back in 1981.[14] In the early months, intervention was needed to contain the rate from slipping too far on the weak side. Later in this period, upward pressure emerged and the authorities intervened to sell HK dollars. From the evidence of movements in the rate, it seems that in those days the authorities regarded 7.75 as the widest tolerable strong-side limit.

The only monetary liabilities of the Exchange Fund were certificates of indebtedness, and there was no wider mechanism for unsterilised intervention in the true currency board style. Neither the authorities' interventions in the foreign exchange nor in the money market could have any direct impact on monetary or liquidity aggregates, since the Exchange Fund banked its HK dollars with the banking system. The process was automatically one of sterilisation.

This does not mean that interventions were ineffective. There were at least four channels by which the intervention tactics may have influenced the exchange rate in the desired manner:

(a) The conventional portfolio effect, with pressure on the currency abating as agents' portfolios reached the desired rebalanced position.

(b) The fact that intervention generally took place only after the authorities had agreed a strategy with HSBC – ensuring that the two parties were not pulling against one another, and more likely that they were jointly operating in the same direction. With HSBC by far the most dominant player in HK dollar markets, their moves would be important both in substance and as a signal to the rest of the market.

[13] Within this period the author himself was intimately involved in Hong Kong's monetary management until April 1985.

[14] The money market intervention scheme was introduced in November 1981 in collaboration with HSBC. HSBC would withdraw funds from the money market on behalf of the government and at the government's expense (in terms of interest), and then refrain from re-lending them into the market. This was intended to have the effect of tightening interest rates, as a result of the withdrawal of liquidity. In practice, although this mechanism could prop up interbank rates on a particular day, the impact faded thereafter, since banks and others could draw on facilities with HSBC to replenish liquidity, and the government's presence as a ready bidder would merely encourage round-tripping. The effect could therefore be sustained only by borrowing ever-cumulating amounts, at rising cost. There was nothing in the agreement to limit the overall size of HSBC's position vis-à-vis the remainder of the banking sector, and, although HSBC played to the spirit of the agreement by refraining from any deliberate recycling of liquidity, there was little that they could do, or would have wanted to do, to deny others access to facilities with them. Despite its shortcomings, the scheme could be effective in the short term. It continued to be employed in the early stages after the re-introduction of the currency board in 1983, in order to assist the convergence of the market exchange rate. The scheme became formally redundant only when the Accounting Arrangements were introduced in 1988.

(c) Given that potential pressure on the rate might come from a large order from a single player, the willingness of HSBC to contact the authorities and recommend dealing with such a deal expeditiously before it sparked any significant move in the rate which might provoke a snowballing effect. Such a tactic was especially helpful during periods of fragile sentiment.

(d) The ability of the authorities, not so much to intervene, as to abstain from intervening unhelpfully at particular times. Given habitual budget surpluses in this period, the Exchange Fund was receiving a steady stream of HK dollars from the government treasury to invest. In selecting the timing for any associated purchases of foreign currency, the authorities could exercise some influence over the exchange market.

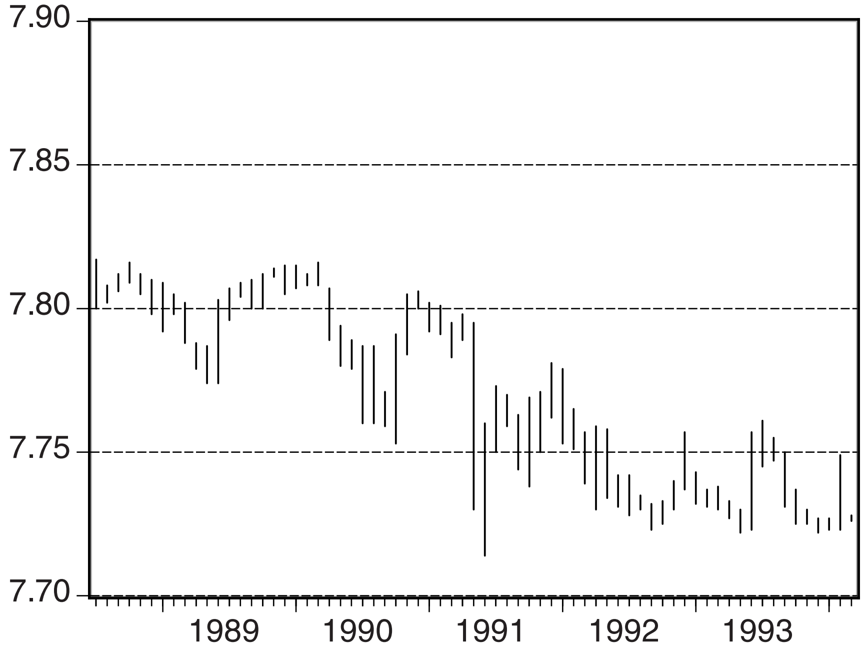
In 1986-87, partly due to persistent weakness of the US dollar, there were periodic speculative flows into Hong Kong in anticipation of a possible revaluation. The authorities were concerned about the amount of exchange market intervention that might be needed to defend the 7.80 rate, and the adverse consequences for the local economy of a flood of liquidity into the banking system. Thus they established, via secondary legislation, a scheme which would enable them to charge negative interest rates on the banks, and allow the banks to pass those on to customers in the guise of 'deposit charges' on large HK dollar deposits. The scheme was formally authorised in December 1987, but was never in fact used.

In this period, therefore, the narrow currency board – based, as it was, only on physical currency – functioned just as it should in the immediate mechanical sense. But that was insufficient to deliver broader currency stability, and consequently the authorities were active in the markets, outside the formal ambit of the currency board. This exercise of discretion to intervene in the markets plainly made a positive and crucial contribution to the goal of a stable exchange rate. With the passage of time, confidence in the fixed exchange rate grew, so that under normal circumstances there was less need for intervention (though the gradual purchase of foreign exchange for investment purposes continued). But, whenever a bout of unease re-emerged, the authorities still found themselves with a role to play, and, when positive speculation surged, they were even moved to put in place the negative interest scheme as a reserve instrument.

July 1988 to March 1994

For the first two years of this period the rate was mostly in the narrow range 7.78-7.82. From mid-1990, however, it tended to be persistently rather stronger, hitting 7.714 in June 1991 and settling around 7.73 in the second quarter of 1992; it moved between 7.72 and 7.76 for the rest of the period, mostly in the stronger half of that range.

HK$-US$ exchange rate
lowest-highest spread per month
18 July 1988 to 12 March 1994



This phase began with the instigation of the Accounting Arrangements in July 1988. HSBC, as the management bank of the clearing house, was required to maintain an account with the Exchange Fund, which would be determined by the HKMA and could only be altered by transactions instigated or approved by the HKMA. A structure of interest rate incentives and penalties was put in place to encourage HSBC to manage the net clearing balance of other banks to be at that same level.

This, in effect, established the principle of the banking sector holding its settlement reserves in central bank money, although in practice at one remove. HSBC's balance at the Exchange Fund is referred to as the Balance. Subsequently, with the implementation of real-time gross settlement in December 1996, all banks became obliged to maintain settlement accounts directly with the Exchange Fund. Thus the intermediary role of HSBC came to an end. The Balance was thus superseded by what is known as the Aggregate Balance – the sum of all banks' balances at the Exchange Fund. In terms of the debate on discretion, it is the 1988 move which is important. The 1996 reform is best regarded as an operational refinement.

Now, for the first time, the authorities could undertake unsterilised foreign exchange intervention, by requiring the HK dollar leg of such transactions to be settled via the Balance. They could also settle money market interventions through this account. Yet the formal currency board convertibility rule continued to apply only to certificates of indebtedness. The scope for arbitrage was as limited as it ever had been. The fact that the onus rested on the authorities to initiate any intervention implied a continuation of a significant element of discretion. Meanwhile, investment activities in connection to the fiscal reserve could continue to take place outside the monetary regime.

In practice, the focus of intervention became the money market rather than the foreign exchange market.

Initially the market exchange rate was quite stable, but it later displayed persistent strength, sometimes at a margin of almost 1% beyond the 7.80 point. This might be interpreted to mean that the revised regime was unable to improve exchange rate convergence. More probably it reflects the fact that the authorities deliberately tried to intervene less often, and that they were not averse to the currency exhibiting some underlying strength by staying comfortably on the strong side of 7.80.

March 1990 saw the first issuance of Exchange Fund bills – to be supplemented by the longer dated Exchange Fund notes from May 1993. The programme was partly motivated by the desire to develop a debt market in Hong Kong, but it could also serve as an additional instrument of liquidity management. Once the market became established it would be preferable, from a prudential point of view, for the authorities to inject liquidity to the banks by buying back these securities for the account of the Exchange Fund, or by entering into sale and repurchase agreements in these securities, rather than by lending unsecured.

Exchange Fund paper was for a while regarded as an active intervention tool of that sort, but, going forward in time, with the advent of real-time gross settlement in December 1996 the paper came to be seen principally as a collateral device in the payments system. The subsequent measures of September 1998 limited the overall issuance of such paper and assured the banks of unrestrained convertibility for their holdings of Exchange Fund paper into settlement balances (albeit at a discount rate, which might be penal).[15]

The introduction of Exchange Fund paper appeared to presage more frequent interventions, but in the money market rather than the foreign exchange market. Thus:

> "With the launching of the Exchange Fund bills programme in mid-March, the Exchange Fund will operate more frequently in the money market. Under normal circumstances, the operations are either for the purpose of relieving a shortage of liquidity arising from a take-up of Exchange Fund bills, or to mop up surplus liquidity arising from the redemption of these bills. But, if the need arises, the Exchange Fund may, through under- or over-compensating the effect of the issue or redemption of Exchange Fund bills, or through buying or selling bills in the secondary market, produce a level of interbank liquidity necessary to ensure exchange rate stability."[16]

---

15 As part of the later September 1998 measures it was decided that, other than to absorb payments of interest, net additions to the total of Exchange Fund paper in issue would in future only be made in the event of a sustained inflow of funds to the HK dollar. However, when the question has since been raised in the Currency Board Sub-committee of the Exchange Fund Advisory Committee as to whether additional paper should be issued to mop up excess liquidity in the money market (see minutes of meetings of 7 May 1999 and 5 March 2004), the decision has gone against such issuance. This seems to be the correct decision, since any attempt to reward the holders of surplus, non-interest-bearing balances with interchangeable interest-bearing instruments would merely weaken the currency board adjustment mechanism. In that sense, the strategy announced in 1998 was probably mistaken. Anyway, the upshot of all this is that the stock of Exchange Fund paper has in practice been frozen, apart from the additions which mirror interest payments. Thus, Exchange Fund paper is no longer seen as an instrument for influencing the macro-monetary situation and is no longer a material topic in the rules-versus-discretion debate.

16 *First Quarter Economic Report* 1990.

It was tactics of that sort which were the main source of changes in HSBC's Balance, as shown in Table 1. By contrast, during this period the Exchange Fund did not appear to intervene in the foreign exchange market for settlement through the Balance.

June 1992 marked the inception of the liquidity adjustment facility (LAF). This provided, in effect, for the HKMA to serve as residual lender and borrower in the HK dollar short-term money market at announced floor and ceiling interest rates. These were fixed by reference to US rates and were set 2% apart for most of the period – expanded to 3% in October 1997. Operationally, the authorities continued, subject to the exchange rate performing satisfactorily well, to focus on the level of liquidity, fixing the Balance at what was deemed an appropriate level, which was not expected to be altered very often.

Despite the suggestion, in the above quoted passage, that the authorities might be quite active from March 1990 onwards, they elected to alter the Balance on only seventeen occasions in the ensuing four years (making a total of only thirty during the entire period July 1988 to March 1994).[17] Available details are shown in Table 1.

In this period, interventions were mainly undertaken with the aim of smoothing the money market. For example:

(a) Around the time of the Hong Kong Telecom share issue in December 1988, there was intervention first to inject and subsequently to withdraw liquidity.

(b) When some China-related banks found their liquidity under pressure immediately following the Tiananmen incident of 4 June 1989, the authorities injected funds into the system.

(c) The withdrawal of liquidity in May 1991 was said to be in order to contain inflationary pressures.

(d) In July 1991 liquidity was injected to pre-empt possible tightness that might ensue from the collapse of Bank of Credit and Commerce International.

(e) In March 1992 the injection was to ease a squeeze arising from share issuance activity.

(f) The heavy injections listed at times in 1993 were also motivated by share issuance activity.

(g) The withdrawal of liquidity in July 1993 was, however, sparked by some negative pressure on the exchange rate rather than by liquidity concerns *per se*.

---

17 HKMA *Quarterly Bulletin*, November 1994.

For the sake of completeness, it is also relevant to record that:

(a) Prior to the establishment of the LAF in June 1992, banks which needed help to square their clearing accounts after the close of the interbank market could request so-called late assistance from the Exchange Fund. This facility was used in 15 instances during 1991 and a further 34 instances in 1992 up to the time that the LAF was launched in June.

(b) Late assistance was then superseded by the LAF lending facility, accompanied by the creation of the LAF deposit facility. Available statistics for utilisation of the two sides of the LAF are shown in Table 2.

Both those facilities were, however, initiated at the discretion of the banks, not the authorities. In the context of the debate about rules and discretion on the official side, the notable feature of this period was that the authorities saw it as their role to deliberately manage the money market, almost as an end in itself. Of course, the overriding aim was still the stability of the Hong Kong dollar against the US dollar, but that rate was allowed to drift into the strong side and was left there, apparently with official approval, while the authorities busied themselves with deciding what was the appropriate level of liquidity in the banking system.

Although there is no evidence that this tactic actually caused any damage, one may wonder whether it was strictly necessary or optimal. An alternative would have been to intervene in the foreign exchange market, more in the tradition of a currency board, holding the rate closer to 7.80 and then, by allowing the deals to affect the aggregate balance, flooding the market with extra liquidity (in the case of upward pressure on the currency) which would have forced interest rates down and set in motion the classical currency board adjustment mechanism. Moreover, on the occasion of major share offerings, it is possible that the banks, if left to their own devices, could have sorted out the attendant liquidity problems themselves. It may only have been because the authorities were visibly so anxious to help, that the banks did not feel obliged to do more for themselves.

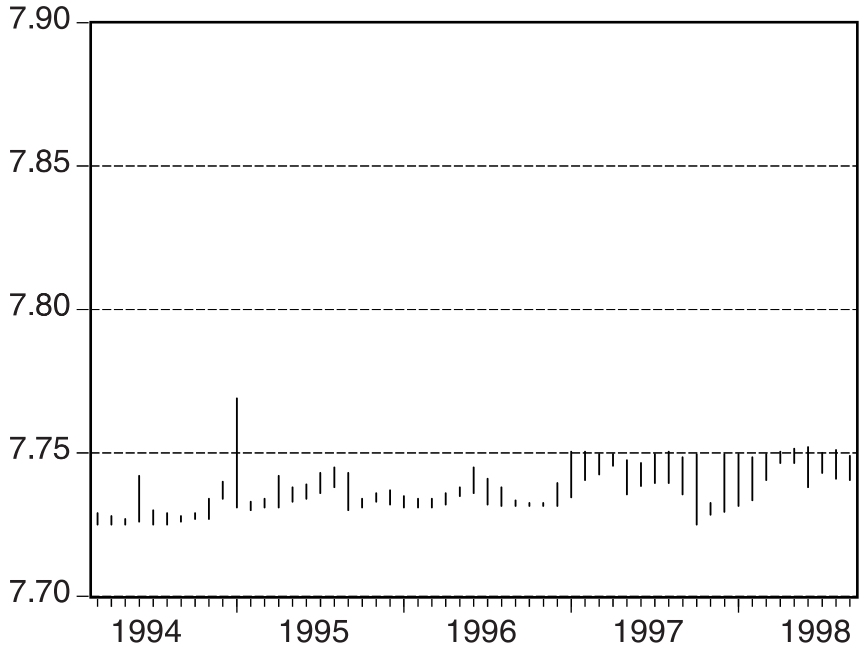
In seeking an explanation for the authorities' apparent fixation on money market conditions, one should note that the market was dominated by a single commercial bank, HSBC, and there was always a suspicion that HSBC dictated market conditions to its own advantage, even after the Accounting Arrangements were put in place. This was the principal consideration behind the creation of a deposit facility for banks under the LAF, and it helps explain why the authorities felt the need to monitor closely and exert influence over the money market.

In sum, the authorities began this period by arming themselves with the framework which would allow the currency board mechanism to operate on a wider and more effective definition of the monetary base – cash plus banks' reserve money instead of just cash alone. In the event, however, they largely rejected that opportunity, preferring to concentrate, in day-to-day terms, on looking after the liquidity of the banking system. They would not, of course, do this in a manner that was ultimately inconsistent with broad stability of the exchange rate, but one is left wondering whether they needed to do it at all, or for so long a period, and whether they would not have been better advised to move more quickly to the sort of reforms which were eventually introduced in 1998.

March 1994 to September 1998

Apart from breaking out to 7.77 at one point in January 1995, the rate stayed in the range 7.72-7.75, and mostly 7.73-7.75. As the period progressed, 7.75, rather than 7.80, became established as the de facto weak-side limit.

HK$-US$ exchange rate
lowest-highest spread per month
13 March 1994 to 5 September 1998



This phase was in most respects a continuation of the preceding one, except for the fact that in March 1994 the HKMA announced that it had revised its mode of operation from targeting the level of liquidity, to targeting short-term interest rates in order to prevent the Hong Kong interbank offer rate (hibor) going outside the LAF range.[18] Since the very existence of the LAF would tend to prevent hibor moving outside the range (but did not prevent it entirely), the intended message seems to have been that the Aggregate Balance (of the banking system at the Exchange Fund) might be varied more often in order to steer hibor closer to the middle of the band, rather than allowing it to hit the extremes – occurrences which would have triggered more intensive use of the LAF and perhaps have also aroused concerns about interest rate volatility in the broader macroeconomic context.

In its limited objective, the change of approach appeared to have some success. In the remaining months of 1994, for example, the overnight hibor kept within the LAF band, whereas it had broken out occasionally under the previous approach. The HKMA was indeed adjusting the level of liquidity somewhat more frequently and aggressively. For instance, the HKMA records that it injected $3.8 billion in late

[18] "Management of interbank liquidity", HKMA *Quarterly Bulletin*, November 1994.

March to smoothen end-quarter effects, and reversed that in early April; towards the end of June it was again active on a more frequent basis than before; on 30 August and 2 September it injected $1,500m and $2,690m respectively, and then took it back shortly afterwards.[19]

There was, however, an inherent ambiguity in the HKMA's approach. It hoped that, "by thus containing the volatility of the interbank rate, the LAF mechanism helps to reduce the volatility of the exchange rate". But the "HKMA normally adjusts the LAF rates with close reference to movements of US interest rates" (in practice it was not so much 'normally' as 'always').[20] However, the whole basis of the currency board approach is that interest rates should be free to move sharply in response to any change in sentiment about the currency, and should certainly be allowed to open up a sizeable differential, in whichever direction, relative to rates of the anchor currency. Thus there was little sense in priding oneself on keeping interest rates stable vis-à-vis US rates. This could frustrate rather than promote exchange rate stability.

That this inconsistency was tolerated at the time with, in effect, an interest rate policy accompanying the exchange rate policy, albeit the former being, in the limit, subservient to the latter, probably owed something to two factors. First, there was a continuing concern about market domination by a single bank. Second, as noted earlier, the role of the Aggregate Balance in terms of the currency board had not yet been specified. Although it could be readily demonstrated that the balance was amply backed by foreign exchange, there was no convertibility undertaking in respect of it. The HKMA still described its objective as simply to ensure that money market conditions were consistent with exchange rate stability. Paradoxically, its actual tactics may have weakened rather than strengthened that consistency. The inconsistency was finally exposed during the Asian financial turmoil of 1997 when the HKMA felt impelled to ration access to the LAF window. This caused consternation. Recognition of the problem led eventually to widespread reform in 1998.

The true objective of monetary management at this time could perhaps have better been described as to maintain maximum stability in interest rates, relative to US rates, consistent with the exchange rate being within an acceptable range on the strong side of 7.80. That objective – if one could set aside the issue of currency board discipline for a moment – would have sounded very reasonable to many economic agents in Hong Kong, for whom interest rates were probably of greater concern than the exchange rate.

In fact, the exchange rate strengthened to almost 1% stronger than 7.80 in the summer of 1994. This, while seen by some as a symbol of virility, caused doubts in other minds as to the authenticity and hence durability of Hong Kong's currency board system. But when the rate momentarily weakened quite sharply in January 1995 – albeit only to 7.7725 – the HKMA intervened significantly in the foreign exchange market to arrest the decline.

---

19 As reported in the section "Operation of Monetary Policy" in successive *Quarterly Bulletins*.

20 Quotations from "The interest rate structure in Hong Kong", HKMA *Quarterly Bulletin*, November 1994.

In May 1995 the HKMA wrote that Hong Kong's regime was indeed an authentic currency board because the monetary base was 100% backed by foreign exchange (as written this seemed to mean the stock basis, but did not exclude the flow too), and because the Exchange Fund did not lend to government or business, while any lending to banks was fully secured by Exchange Fund paper which was in turn backed by foreign exchange. Oddly, and in contradiction to textbook teaching on currency boards, the HKMA also claimed that its capacity to conduct open market operations to smooth interest rates strengthened rather than weakened the system.[21]

The HKMA had also veered away from, rather than towards, currency board authenticity when, in March 1994, it began to allow banks to submit certain Hong Kong debt securities other than Exchange Fund paper as collateral for borrowing under the LAF. Exchange Fund paper could be demonstrated to be fully backed by foreign reserves, so that any expansion of bank liquidity which might result would comply with the backing rule. The same could not be said of the alternative instruments now being admitted.[22]

In the continuing absence of any formal convertibility undertaking for banks' balances (individual banks were since December 1996 holding accounts at the Exchange Fund), the Chief Executive of the HKMA defended "constructive ambiguity" in a speech in March 1998,[23] declaring "I am not in favour of showing my cards to speculators". Interestingly, he also made it explicit that the HKMA might "in exceptional circumstances" alter the aggregate balance without a corresponding change in US dollar holdings; he cited the example of wishing to smooth the money market at the time of a big public share offering. However, the market was already becoming adept at coping with such events without much official assistance. He also emphasised how fiscal transfers (eg of surpluses to the Exchange Fund for investment, but equally applicable to drawdowns in the event of a deficit) were sterilised so as to be entirely neutral to monetary policy.

In terms of the rules-versus-discretion debate, however, this phase of operation, despite the declared greater focus on interest rates than on liquidity, was not significantly different from the preceding one. The HKMA, as it now was, was continuing to exercise a great deal of discretion in its money market interventions.

Close to the end of this period, in August 1998, the HKMA intervened heavily in the foreign exchange and stock markets to thwart market manipulation by certain dominant market players. The action was justified because the free play of market forces, which includes speculation of a price-taking nature, was being swamped by actions to manipulate prices in an anti-competitive manner. The bulk of HKMA interventions were conducted on a sterilised basis, outside the currency board system.[24] This episode

---

21 HKMA *Quarterly Bulletin*, May 1995.

22 This loophole was later closed by the measures of September 1998.

23 Reproduced in the *Quarterly Bulletin*, May 1998.

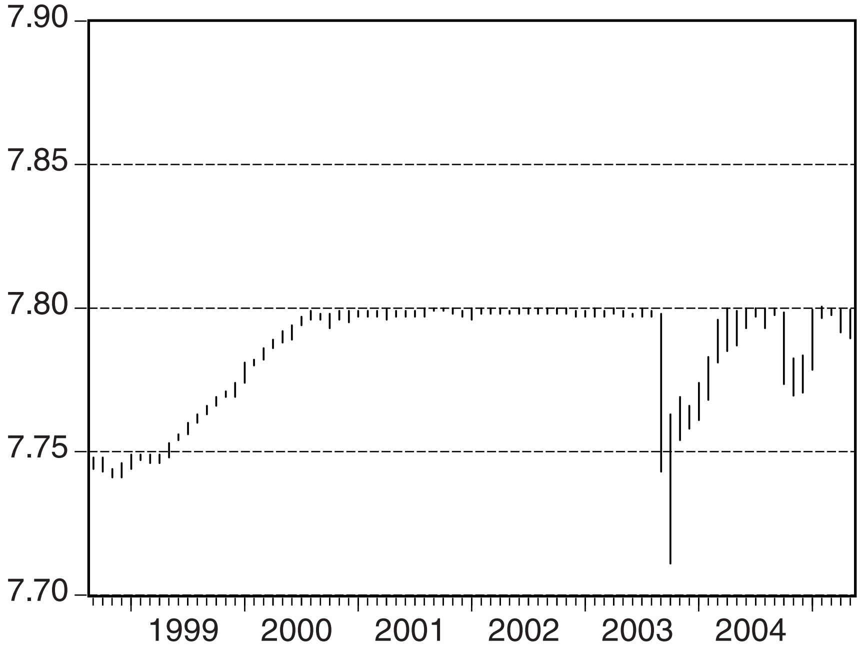
24 For an account of these events, see "Operation of monetary policy" and "Why we intervened", HKMA *Quarterly Bulletin*, November 1998.

well illustrates the point that official bodies are capable of conducting sterilised interventions, and entitled to do so, even if the core monetary policy regime is a currency board. The episode is not therefore relevant to the question of rules versus discretion within the currency board operation.

<u>September 1998 to May 2005</u>

Mirroring the new convertibility undertaking, the rate moved to just under 7.80, and was steady there until September-October 2003 when it strengthened sharply to 7.71. This was shortlived and the rate was in the range 7.76-7.80 for most of the rest of the period, being at or close to 7.80, but never weaker, for much of the time.

HK$-US$ exchange rate
lowest-highest spread per month
September 1998 to 18 May 2005



As part of a package of measures in September 1998,[25] the HKMA introduced a firm convertibility undertaking for banks' balances at the Exchange Fund, on the weak side. This was initially set at 7.75 (ie the Exchange Fund stood ready to sell US dollars to banks at that rate), but was raised during the course of 1999 to 7.80. There was, however, no corresponding undertaking on the strong side.

Also, the LAF was abolished. On one side this was replaced by the discount window facility, which was different in the significant respect that the ceiling rate at which the HKMA would provide funds would ultimately be set by reference to peak local interbank rates and not by a pre-announced rate based on US rates. On the other side, the LAF floor rate and the associated facility for banks to place surplus funds with the Exchange Fund at that rate were discontinued altogether.

[25] For a full account of these measures, see "Strengthening of currency board arrangements in Hong Kong", HKMA *Quarterly Bulletin*, November 1998.

This package, and the accompanying changes in operational strategy, stripped the HKMA of a considerable amount of the discretion which it had hitherto exercised.

Most obviously, the introduction of weak-side convertibility for banks' balances at 7.80 and the subsequent practice of never intervening on that side unless the 7.80 promise was triggered, brought an end to the exercise of discretion on that side. However, the HKMA continued to exercise discretion in intervening on the strong side.

At the same time, with the abolition of the LAF bid rate and conversion of the offer rate to the discount window arrangement where the discount rate would be permitted, if necessary, to be driven to any height in response to market pressures, the HKMA effectively withdrew from proactive involvement in the money market. It no longer sought to intervene to keep interest rates in a particular corridor. Clarification of issuance procedures for Exchange Fund paper also removed any possibility that they might be used to massage the money market.[26]

From then until May 2005, the sole area of controversy concerning discretion was intervention on the strong side. The amounts of discretionary intervention over this period are shown in the Table 3.

The topic of strong-side discretion clearly created a certain amount of angst, as it was repeatedly reconsidered by the EFAC Sub-committee. Thus:

(a) The matter was reviewed by the sub-committee in October 1999. It recommended to leave things alone and retain flexibility. Two particular reasons were cited: the possibility of "year 2000" problems at the turn of the year, and the desirability of allowing time for any after-effects of the transition of the weak side convertibility rate from 7.75 to 7.80, which had been completed in August, to settle down.

(b) The topic was considered again in July 2000. While recognising the advantages of an explicit undertaking in terms of transparency, tidiness and predictability, arguments on the other side again prevailed. These arguments included the notion that too rigid a structure would play into the hands of speculators, that if the announced spread was too narrow it would have the effect of disintermediating the banks, and that too wide a spread might bring undesirable volatility to the market.

(c) This advice was reaffirmed at the meeting in August 2000; it was agreed that the HKMA should continue to practise discretion, taking three factors into account: the position of the exchange rate, the level of interest rates, and banking liquidity as evidenced by the Aggregate Balance.

(d) In November 2003 the sub-committee again reviewed the policy and recommended maintenance of the status quo.

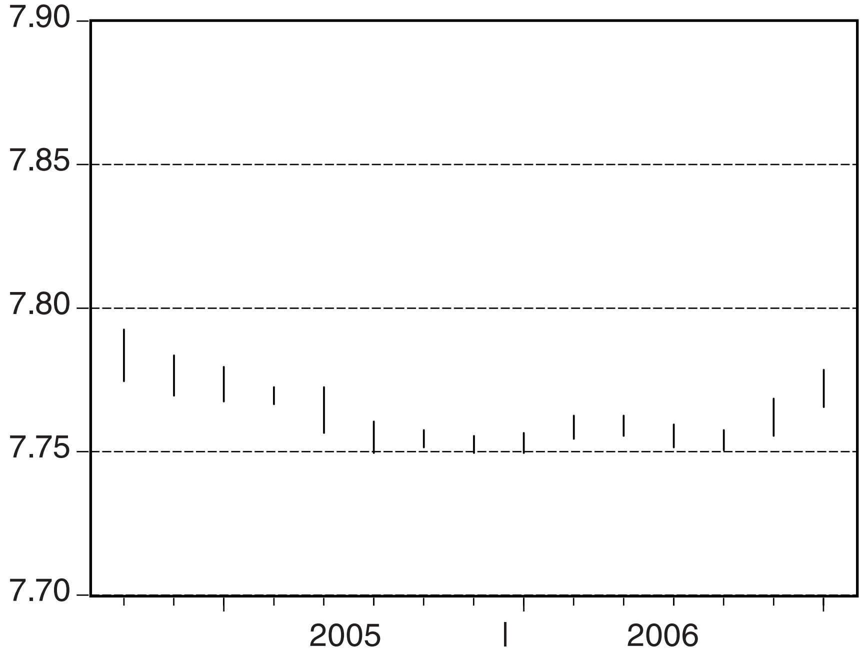
[26] See footnote 15 above.

The reluctance of the HKMA to set a clear strong side limit was interpreted by some market participants as vacillation on the question of a possible formal revaluation, given that upward pressures on the renminbi, from economic forces as well as political argument, were washing over into fairly persistent pressure of inflows into the HK dollar. At its meeting on 13 May 2005, therefore, having rejected the idea on four preceding occasions, the sub-committee at last decided that the time was ripe to introduce a formal strong side convertibility undertaking, as well as symmetry around 7.80.

<u>May 2005 to present</u>

The rate has remained persistently in the stronger half of the 7.75-7.85 convertibility band

HK$-US$ exchange rate
lowest-highest spread per month
19 May 2005 to July 2006



Thus, it was announced that the weak side convertibility promise would be moved to 7.85 (by steps over the ensuing month), and a new strong side convertibility undertaking established at 7.75. The HKMA would retain discretion to intervene within the band. This new regime, with its symmetrical two-way convertibility undertaking, came into effect on 19 May 2005.

Previously the HKMA had not exercised any discretion on the weak side – only ever intervening when the 7.80 promise was triggered. In approving discretionary interventions in either direction within the bounds of the zone, the sub-committee felt that this might at times be appropriate, aimed at "promoting the smooth functioning of the linked exchange rate system, for example, by removing any market anomalies that might arise from time to time". No clue was offered as to what such anomalies might be, but on 25 May, one week after the new arrangements had begun, the HKMA did intervene inside the band with a sale of HK$544 m.

The official explanation was that this intervention was needed to avoid a sharp rise in interest rates on account of share issuance activity. Once again, however, one may query whether the financial system was not perfectly capable of dealing with such a situation on its own in an adequately efficient manner. If it could, then any disturbance to interest rates would be too shortlived to create any problems in the real world.

However, at least part of the reason behind the 25 May intervention may have been the HKMA's wish to put down an early marker to the effect that it could and would make use of its discretion. Yet, fundamentally, there seems to be no convincing reason for leaving this residual scrap of discretion with the HKMA. It is possible that the authorities felt it desirable to retain some means of surprising speculators or inflicting some pain on them. However, in the strict context of the HKMA's mandate to achieve exchange rate stability, and given that 7.75-7.85 has been defined as the acceptable range consistent with stability, it is not obvious that intervention before the band limits are actually reached makes any significant contribution to the goal. Since the May 2005 action, up to the time of writing (August 2006), there has be no further intrazone intervention.

5. Conclusions

When Hong Kong re-adopted a currency board in 1983, it was, through force of circumstances, based only on the physical currency. The authorities were active in the foreign exchange market and, at least in the initial stages, in the money market, with interventions to ensure that the market exchange rate held close to 7.80. Without such intervention, divergences would almost certainly have been larger, belief in the ability of the arrangement to deliver exchange rate stability would have faded, and Hong Kong might have been left with a segmented system of an essentially floating market exchange rate in parallel with a restricted market in banknotes. In that event, the 7.80 rate for currency might reasonably have been abandoned as serving little useful purpose, and Hong Kong would have been back at square one.

Thus, it seems that the discretionary interventions of the initial currency board period were both necessary and successful.

One might argue that, given such dependence on intervention in apparent contravention of currency board principles, the authorities should have been quicker to introduce the reform which eventually came in 1988, when the Accounting Arrangements were introduced. However, this matter did not receive immediate attention in the period following October 1983, because there was a lingering hope that arbitrage might somehow deliver convergence. And even when that hope faded, it required time to negotiate the new arrangement, since it involved a substantial upheaval to the traditional position and role of the leading commercial bank.

The following decade, 1988-98, can be characterised as one during which the basic framework was in place to allow bank reserve money to play its proper role in the currency board process, in terms of convertibility on an unsterilised basis. Yet the authorities chose to leave that mechanism in limbo, and instead concentrated on managing interbank liquidity or short-term interest rates.

This choice was partly motivated by the belief that the money market, if left to itself, would not function fully in accordance with free market principles, because of the dominance of a single bank.

Although this strategy was fundamentally at odds with currency board principles, the authorities held firm to the overriding objective of keeping the market exchange rate within close range of 7.80, and they therefore only operated in the money market within the scope which that objective would allow.

As a result, it would be wrong to say that the use of discretion detracted significantly from the goal of exchange rate stability, but at the same time it seems that the discretionary money market interventions might not have been necessary, had the authorities been more willing simply to allow the classical currency board mechanism to be triggered by automatic foreign exchange intervention once the rate reached the limits of some declared tolerable range.

The authorities waited until the shortcomings of this regime phase became starkly apparent before proceeding, in 1998, with reforms which took the exchange rate regime significantly closer to the concept of a tightly rules-based currency board.

Thus, the 1998 measures brought the system much further into line than hitherto with the principle of the entire monetary base being convertible on the basis of fixed rates, through unsterilised intervention; but not the whole way: discretion was retained in respect of foreign exchange intervention on the strong side. Meanwhile, discretionary money market intervention was discarded, and interest rates were freed up.

Although, over the ensuing years, this remaining strong-side discretion may sometimes have been exploited profitably by the HKMA at the expense of speculators, there is no evidence that, on balance, it assisted underlying exchange rate stability. On the contrary, the absence of an announced intervention point occasionally gave rise to unhelpful rumours about revaluing the peg or abandoning it.

Eventually, in 2005, a strong-side convertibility undertaking was introduced, and the weak-side peg adjusted to provide symmetry around 7.80. This was the penultimate step towards what could be a fully rule-based system in accordance with the purist textbook model of a currency board. But it will only be possible to claim complete adherence to that model if the HKMA takes the ultimate step of surrendering the discretion which it has kept for itself to intervene within the band.

It is far from clear why the HKMA needs to retain that intrazone discretion, although, once again, it is difficult to argue that it will be damaging. If nothing else, the HKMA is providing a target at which the purists can continue to snipe.

In sum, discretionary intervention was necessary and effective in the early years from 1983. As the years passed, although retention of discretion was not obviously damaging, the authorities may have clung on to it rather longer than they needed to. Indeed, whatever, the excuses or explanations for its retention – which might even include an instinctive reluctance of the HKMA to write itself out of the script – twenty-one years seems an inordinate length of time for the authorities to have taken in moving from the rudimentary arrangements of 1983 to the almost entirely rule-based regime reached in 2005. But they did eventually arrive and, with such a set of rules now in place, it is doubtful whether HKMA needs to hold on to its modest remaining discretionary capability.

Stepping back from the nitty-gritty of the regime, one must remind oneself of the overall stability of the exchange rate at close to 7.80 for almost 23 years. This is proof enough of success in meeting the declared monetary policy objective. In the final analysis, it may not matter very much that, in meeting their objective, the authorities did not always adhere to currency board 'best practice', or that they were rather slow in moving towards it.

Box A. Distinguishing rules from discretion

Since the focus of this paper is on the rules-versus-discretion debate, it is necessary to clarify the distinction. For the avoidance of doubt, in the context of this paper, 'rules' include promises or stipulations of a *bona fide* nature announced by the authorities or the banks, as well as arrangements which have a formal statutory backing. For example,

(a) the rate of 7.80 for certificates of indebtedness which was initiated in October 1983 was essentially a voluntary agreement between government and the note-issuing banks, and was only given statutory force when the Exchange Fund Ordinance was amended in May 1984; but it is considered here to have been a 'rule' throughout;

(b) the Accounting Arrangements of 1988 were a non-statutory agreement between the authorities and HSBC, and remained such until 1996, but are regarded as having been a 'rule'; the subsequent requirement on all banks to hold an account with the Exchange Fund had statutory force from the outset, as the result of an amendment to the Banking Ordinance;

(c) the past and present convertibility undertakings for banks' balances are operational specifications by the Monetary Authority, within the general powers delegated by the Financial Secretary; the Monetary Authority could alter these undertakings at will, provided that any such action continues to be in furtherance of the instruction from the Financial Secretary to aim for stability of the exchange rate at around 7.80; despite the Monetary Authority having the discretion to alter such parameters, they are regarded here as sufficiently rigid to be classed as 'rules'.

Actions which are not simply the strict and specific application of such announced rules or rule-type agreements are deemed to constitute the exercise of discretion.

Box B. Institutional milestones

In the context of monetary policy the key point to note about Hong Kong's institutional arrangements is that prior to 1988 no mechanism existed for direct official influence over the reserve money of the banking system. There was no central bank, in name or substance; commercial banks and government all held their ultimate liquidity in the form of commercial bank money – essentially as balances with HSBC which was the dominant bank and the settlement bank for the payments system.

The Accounting Arrangements, introduced in 1988, enabled the authorities for the first time to influence bank liquidity through their own operations in the foreign exchange or money markets. However, at this stage HSBC was the sole settlement counterparty for official operations, so that HSBC's actions in response to official interventions were key to determining the overall impact of such interventions on the banking sector.

HSBC's pivotal role ended in 1996 when the requirement for all banks to maintain an account at the Exchange Fund was implemented. From that moment onwards there was a competitive set of counterparties and the HKMA possessed the full monetary capability common to central banks around the world.

In accounting terms, the Exchange Fund has always been the government account through which any monetary operations were conducted, and with which HSBC held its obligatory balance under the Accounting Arrangements in the period 1988-96 and with which the banks have held their settlement accounts since 1996.

Policy and strategy relating to the Exchange Fund have always been under the ultimate control of the Financial Secretary. Executive responsibility lay with the Secretary for Monetary Affairs until 1991, when it passed to the newly created post of Director of the Exchange Fund. In 1993 the Hong Kong Monetary Authority was established, to which that responsibility in turn passed.

Box C. Chronology of significant administrative measures since 1983

October 1983	Re-establishment of currency board in respect of certificates of indebtedness (the backing for the note issue) at rate of USD1=HKD7.80. Note-issuing banks agree with other banks to supply or redeem notes to/from them also against US dollars at 7.80 (see Box D)
May 1984	Enactment of amendment to Exchange Fund Ordinance giving statutory backing to the above arrangement for certificates of indebtedness
July 1988	Introduction of the Accounting Arrangements, *inter alia* requiring HSBC to hold a balance with the Exchange Fund. Focus of policy becomes, in practice, the management of banking sector liquidity
March 1990	First issuance of Exchange Fund bills, to be supplemented by Exchange Fund notes in May1993
June 1992	Launch of the Liquidity Adjustment Facility
March 1994	HKMA states that it is revising its mode of operation from targeting liquidity to targeting short-term interest rates
September 1998	HKMA announces its “seven measures” to enhance the system, including a firm convertibility undertaking on the weak side for banks’ balances at the Exchange Fund into US dollars (at 7.75, subsequently rising to 7.80), abolition of the LAF, and introduction of the discount window arrangements
January 1994	Note-issuing banks revert to supplying/redeeming notes to/from other banks against payments in HK dollars (see Box D)
May 2005	Introduction of symmetrical convertibility undertakings for banks’ balances, at 7.75 on the strong side and 7.85 on the weak side

Box D. Special features of the initial note-issuing arrangements in 1983

In the circumstances of Hong Kong in 1983, the prospect uppermost in people's minds was of the exchange rate probably being weaker than 7.80 (say at 7.90 – costing more HK dollars to buy one US dollar). The note-issuing banks saw that they would be faced with losses if they had to surrender US dollars valued in the market at 7.90 in order to purchase certificates of indebtedness valued at only 7.80. While they accepted the inevitability of bearing that loss in respect of the currency needs of their own customers, they saw no reason to bear it in respect of the customers of other banks. The note-issuing banks (only two at that time – HSBC and Standard Chartered) therefore negotiated an additional arrangement with the other banks, whereby the latter would also settle in US dollars at 7.80 any transactions with the note-issuing banks to draw or retire banknotes. Thus, in the event of the market rate straying from 7.80, each bank would bear the cost (or reap the profit) of satisfying banknote requirements only in respect of its own customers.

Although superficially this seemed a reasonable and fair arrangement for sharing possible gains or losses from the note-issuing process, the note-issuing banks did not realise at the time that it also gave rise, in theory at least, to the opportunity for riskless arbitrage profits at their expense by other banks in collusion with non-bank parties (including, most obviously, non-bank subsidiaries or affiliates of the banks themselves).

The process could operate as follows. Assume a note-issuing bank, N; any other bank, B; and a non-bank party, C, who may have an account with both N and B. Suppose the exchange rate in the market is 7.90. C withdraws HK$78,000 in notes from N. N must buy a certificate of indebtedness of denomination HK$78,000, but must pay the Exchange Fund for it in US dollars at 7.80 – a sum of US$10,000. However, in order first to buy that sum of US dollars in the market N must, given the market rate of 7.90, spend HK$79,000. C now pays the HK$78,000 notes into an account with B. B passes the notes to N for redemption, for which, in accordance with the agreement regarding the movement of notes between the note-issuers and other banks at the agreed fixed rate of 7.80, N must pay B US$$10,000. N can simultaneously obtain this sum from the Exchange Fund by redeeming the HK$78,000 certificate of indebtedness. But B can sell the US dollars, which it has thus received, in the market for HK$79,000.

So, against the deposit of HK$78,000 in notes from C, B is holding HK$79,000 – a profit of HK$1,000. C can now instruct B to make an interbank transfer of HK$78,000 to C's account at N. This leaves C in exactly the same position as he started. All that C has done is to withdraw notes from N, redeposit them with B and then have the credit balance transferred back to N. C may, of course, have been promised a share of B's profit. Meanwhile, N suffers the loss which is the counterpart of B's gain: N had to pay HK$79,000 to fund the initial withdrawal of HK$78,000.

The note-issuing bank is therefore the victim of round-tripping. Significantly, it may also be the victim if round-tripping occurs in the opposite direction, when the market exchange rate is on the strong side of 7.80 – say at 7.70. In that instance, B draws HK$78,000 notes from N, paying with US$10,000 which B may have bought at, say, 7.70 (ie for the sum of HK$77,000). C withdraws the HK$78,000 of notes from B and deposits them into his account with N. C then transfers his credit balance back to B. Once again, C is back to his original position. B makes a profit of HK$10,000 because it has paid out only HK$77,000, yet received back HK$78,000. N redeems a certificate of indebtedness for US$10,000, but only receives HK$77,000 when it sells those US dollars in the market. In other words, N has suffered once again, because it has received a deposit of HK$78,000 against which it only holds backing of HK$77,000.

In theory, the threat of such arbitrage activity at their expense should have spurred the note-issuing banks to adjust their interest rates so as to guide the market exchange rate back closer to 7.80, thereby reinforcing the natural adjustment process of the currency board.

In practice, however, the note-issuing banks let it be known that they regarded such activity as contrary to the spirit of the note-issuing system, and that any blatant attempts to profit at their expense through wholesale movements of notes as part of a round-tripping exercise would be countered by the levying of handling charges. In the event, therefore, the extent of round-tripping which actually occurred was minimal. The anomalous arrangement was eventually terminated in January 1994, when the note-issuing banks reverted to supplying and redeeming notes to/from the other banks against payment of the equivalent amount in HK dollars.

Table 1. Action by the authorities to alter the level of interbank liquidity, mid-July 1988 to mid-March 1994

date	injection(+)/withdrawal(-), $ million	closing level of HSBC's Balance with the Exchange Fund, $ million
18 July 1988	accounting arrangements initiated	1,250
7 Sept 1998	-150	1,100
11 Oct 1988	-150	950
12 Oct 1988	-70	880
30 Nov 1988	-20	860
6 Dec 1988	+200	1,060
7 Dec 1988	-200	860
5 Jan 1989	-132	728
5 June 1989	+194	922
7 Aug 1989	-194	728
30 Dec 1989	+150	978
1 Jan 1990 to mid-March 1990	two interventions, amounts not known	not known
late-March 1990	withdrawal, amount not known	510
4 July 1990	-30	480
25 May 1991	-100	380
28 June 1991	+100	480
17 July 1991	+60	540
30 July 1991	+60	600
1 Nov 1991	-100	500
24 Jan 1992	+100	600
16 March 1992	+100	700
28 April 1992	+150	850
29 April 1992	+138	988
6 Aug 1992	+512	1,500
10 Feb 1993	+650	2,150
31 May 1993	+650	2,800
20 July 1993	-800	2,000
13 Oct 1993	+1,000	3,000
7 Dec 1993	+1,000	4,000

The intervention figures refer only to operations initiated by the authorities to influence the level of interbank liquidity. They therefore exclude any overnight liquidity assistance provided to banks at their initiative (whether before or after the process was formalised under the LAF), and any deposits made by banks under the LAF. The figures for HSBC's Balance correspondingly exclude any effect of such transactions.

Sources: Successive editions of the government's *Economic Background* and *Economic Report* (variously for first quarter, third quarter or half-yearly); *Asian Monetary Monitor,* May-June 1989, for figures for 1988.

Table 2. Number of instances of usage of LAF facilities by banks

period	lending to banks by Exchange Fund	placing of deposits by banks with Exchange Fund
8 June 1992 to 31 Dec 1992	90	52
year 1993	92	789
first quarter 1994	25	314

Source: successive editions of government's *Economic Report*.

Table 3. Discretionary sales of HK dollars by HKMA on the strong side, 5 Sept 1998 to 18 May 2005

period	number of days on which HKMA intervened	gross amount sold during period, HK$ billion
1998, 5 Sept – Dec	1	0.2
1999	26	26.8
2000	20	17.7
2001	4	3.0
2002	2	1.0
2003	18	31.9
2004	18	34.8
2005, Jan - 18 May	nil	nil

Source: Report on Currency Board Operations, as reprinted in successive *Quarterly Bulletins* of the HKMA.