

Legislative Council Panel on Financial Affairs

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The Hong Kong Currency Board:

Problems and Solutions

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Executive Summary

1. A Currency board arrangement based on notes and coins is badly obsolete. In this electronic banking age, transactions are settled and large sums of money can move in and out of Hong Kong without involving notes and coins, thus bypassing a currency board that is linked only to notes and coins.
2. Before September 1998, the “homemade” currency board practiced by HKMA was responsible for the high and volatile interest rates that plunged Hong Kong into a recession. The most serious mistake was to treat the aggregate Clearing Balance of the banking system as the only monetary base for the economy. Consequently, a minor (say, HK\$6Bn which is less than 0.35% of the M3 money supply) outflow can potentially wipe out the monetary base of the entire economy and induce jumps in the interest rates.
3. The seven measures announced on 5 September 1998 were a step in the right direction. The most important feature is the transferability of the Exchange Fund Bills/Notes into the Clearing Balance via the Discount Window. According to the HKMA, this allows the monetary base to expand from HK\$2Bn to about HK\$32Bn. The announced convertibility undertaking at 7.75 is also better than the previous well known practice that the HKMA consistently intervened at 7.75.
4. A critical shortcoming of the seven measures is the lack of a time-dimension in the convertibility-undertaking guarantee. The market quickly tested that on 14 September 1998 when a total of HK\$9.3Bn was sold in a single day on the fear of an imminent change to the 7.75 guarantee.

The panic subsided only after the HKMA announced that the convertibility undertaking was guaranteed for the next 6 months. This guarantee is equivalent to a 6-month exchange rate insurance (Merton Miller) and a 6-month put option (Chen/Chan). The calming effect was immediate: a return of HK\$1.6Bn on Sept 15. HK\$7.5Bn on Sept 16 and HK\$1.3Bn on Sept 17. The market confidence gained from the 6-month commitment, as we insisted time and again, was the key to market stability.

In a recent HKMA publication “A Modern Day Currency Board System,” Joseph Yam envisioned that the convertibility undertaking to be “legally enforceable” and “evergreen.” This has the effect of directly integrating the insurance/put option characteristics into the Exchange Fund Bills/Notes. This is an excellent idea.

5. There are, however, major unresolved questions and shortcomings.
 - a. Is the potential transferability of HK\$30 billion from the Exchange Fund Bills/Notes to the aggregate clearing balance enough? If there is a larger capital outflow, can our foreign currency reserves absorb it without inducing high interest rates and without precipitating a crisis in confidence?
 - b. The base rate of the Discount Window is the bridge between Exchange Fund Bills/Notes and the aggregate clearing balance. If the base rate is subject to discretion or is dependent on the local market conditions, it would be an obstacle to the transferability and defeats the purpose of the convertibility undertaking.
 - c. The implicit rising interest rate curve in the seven measures can produce high interest rates in a recession even if there is no attack on the HK\$ __ clearly a shortcoming in the design. This is contradictory to the intent of a currency board.

6. There are potential solutions to those unresolved issues requiring further studies and consultations.
 - a. Reconstruct the currency board according to the current technology in electronic banking.
 - A draft idea was forwarded to the HKMA on 24 October 1998 to tie the currency (credit) demand to the monetary base so that the credit demand and supply signals can transmit through market mechanism. The purpose is to make sure that the market interest rate is determined by demand and supply and not by the design of an interest rate penalty.
 - b. Have a comprehensive and transparent allocation related to the foreign currency reserves:

For example: of the current reserves of about US\$86 billion

 - US\$12Bn backs the notes and coins in circulation
 - US\$22Bn (say) is the monetary base that backs the current credit creation in the banking system
 - US\$30Bn is set aside for contingencies
 - The remaining US\$22Bn is the excess foreign currency reserves that can absorb an equivalent capital outflow without noticeable effect on the economy.

A careful study justifying the allocation is extremely useful and will build confidence in the market. Once the rules and allocations are clearly set and transparent, the market knows how to react to different scenarios and will not get into unnecessary panics in response to minor outflows (such as those in Oct 1997) that are inconsequential to the functioning of the Hong Kong economy.

7. These measures would achieve currency stability and there is no need for the government to intervene unnecessarily in other markets. The best thing the government can do is to provide a stable non-intervention free market foundation for the economy, and the industrious people of Hong Kong can do the rest.

1. **A Currency board arrangement based on notes and coins is badly obsolete.**

We are fully supportive of the idea and the spirit of a currency board for Hong Kong. A currency board based only on notes and coins, however, is badly obsolete in the current electronic banking age. A case in point is the capital outflow on September 14, 1998 of HK\$9.3 billion. The outflow was an amount equivalent to 10% of the HK notes and coins in circulation, but it did not trigger any note-based currency board mechanism. Strictly speaking, Hong Kong does not have a functional currency board at this point.

2. **The “Home-made” currency board was responsible for the high interest rates**

Since Hong Kong does not have a currency board beyond the one based on notes and coins, the Hong Kong Monetary Authority created a “home-made” currency board where the aggregate clearing balance of the banking system was “considered” as the only monetary base. That was the major mistake of the homemade currency board.

At the inauguration of the Real Time Gross Settlement (RTGS) system in Dec 1996, the aggregate clearing balance was set at **HK\$1.5** billion, an amount considered adequate to settle banking transactions in the system. **This balance is the lubricant for the banking system under RTGS.** Unfortunately, when the **HK\$** was under attack, the **HKMA** decided that the clearing balance should also play the role of the monetary base of its currency board. When capital outflow larger than the balance was to be debited against the balance, the lubricant was gone and the system grounded to a halt.

On 23 Oct 1997, the aggregate balance was **HK\$2Bn**, but **HK\$6Bn** (only about 0.35% of M3) was to be debited due to sales of **HK\$** to **HKMA** two days prior. Interest rate shot up to 280% and precipitated a crisis in confidence and plunged Hong Kong into a deep recession. A jump in the interest rate of that magnitude had nothing to do with the self-adjusting mechanism behind the concept of an orthodox currency board.

The self-adjusting mechanism should work like this. If there is capital outflow but the loan demand is strong (due to, say, a strong local economy), there would be unsatisfied demand for the local currency, which induces a mild increase in the interest rate and capital is attracted back. The panic 280% arose not because there was any strong loan demand in the economy, but as a direct consequence of the design of **HKMA**’s homemade currency board where panicky banks were in danger of not being able to settle their clearing accounts unless they were willing to sell **US\$** back to the **HKMA**.

This unfortunate flaw, though somewhat softened after the seven measures of September 1998, is still there in the current design. We’ll come back to this point later.

3. **The benefits of the seven measures announced on September 5, 1998**

On 5 September 1998, the **HKMA** announced seven measures to strengthen the currency board. This represented a major shift in the **HKMA** philosophy. Before then, the design

of the homemade currency board was to induce high interest rates to keep capital from flowing out of Hong Kong. The seven measures, however, were introduced to keep interest rates calm while allowing some capital to flow out.

The promised convertibility undertaking at 7.75 for the aggregate balance was a clear improvement over the previous well known practice that HKMA had been consistently intervening at 7.75. The offer prices for foreign exchange transactions by banks are likely to be kept stronger than 7.75 as long as there is enough liquidity in the aggregate balance, though the bid prices can be weaker than 7.75.

This promise at 7.75, however, would have been rather empty if it is backed only by the HK\$2Bn in the aggregate balance at that time. Any outflow greater than HK\$2Bn would have wiped out the promise.

The most beneficial feature of the seven measures was to allow banks to “fully transfer” their Exchange Fund Bills/Notes into cash in their clearing balances via the Discount Window. According to the HKMA estimates, banks can collectively transfer about HK\$30Bn. Consequently, the convertibility undertaking is extended beyond the HK\$2Bn in the aggregate clearing balance to a total of HK\$32Bn, or about 4% of the total foreign currency reserves at that time. As a result, the aggregate balance is essentially enlarged and unless there is a cumulative outflow of more than HK\$30Bn, the market conditions would not revert to those of the old homemade currency board era.

4. **The events of 14 September 1998 and the 8th measure (a put option/insurance), and the recent HKMA publication by Joseph Yam “A Modern Day Currency Board System.”**

A critical shortcoming of the seven measures was that it does not specify a time dimension upon which the convertibility undertaking would be guaranteed. The market quickly tested that on 14 September 1998 when a total of HK\$9.3Bn was sold in one single day on the fear of an imminent change to the 7.75 promise.

The market was calmed only after the HKMA announced in the afternoon that the convertibility undertaking at 7.75 was guaranteed for the next 6 months. This announcement effectively transformed the convertibility undertaking into an *intertemporal* currency board, or equivalently known as the linked exchange rate insurance (as Professor Merton Miller suggested) or put option/US\$ LAF (as in the Chen/Chan proposal). The calming effect was immediate: a return of HK\$1.6Bn on Sept 15, HK\$7.5Bn on Sept 16 and HK\$1.3Bn on Sept 17. In the end, there was a **net increase** of HK\$1Bn in the aggregate balance after **the 8th measure**, the *intertemporal* commitment that builds **market confidence**, was integrated into the seven measures.

In a recent publication entitled “A Modern Day Currency Board System,” Joseph Yam envisioned the convertibility undertaking to be legally enforceable (p.20) and evergreen (p.24). This will formally turn all Exchange Fund Bills/Notes into convertible bonds where the maturity of the put option is the maturity of the Bills/Notes. This is an

excellent idea that integrates the insurance feature directly into the currency board and makes it intertemporal to build market confidence. We sincerely hope that this is not just a vision, but an integral part of the Hong Kong currency board.

5. **Other major unresolved shortcomings:**

There are still disturbing unanswered questions after the 8 measures of September 1998. Is the additional HK\$30Bn large enough to prevent us from sliding back into previous high and volatile interest rate environment? If there is an aggregate outflow of more than HK\$32Bn, we would be in trouble again with unnecessary jumps in the interest rates. If we enlarge the guarantee to more than HK\$32Bn, that means we would not have the help(curse) of a high interest rate to keep capital from flowing out until there is a significant drop in our foreign currency reserves. Will a drop of US\$8Bn in reserves generate panic in the market place, even though it is only 10% of our total reserves? How much can the drop be before we should panic?

The base rate for the Discount Window determines the ease of transferability from the Exchange Fund Bills/Notes to the aggregate balance. If Exchange Fund Bills/Notes are fully backed by foreign currency reserves, then they are essentially US\$ equivalent and the base rate should just be the Fed Fund rate (plus a small transaction cost of no more than 50 basis points). On the other hand, if the base rate is dependent on local interest rates, then it is just another instrument to weaken the convertibility guarantee and induce high interest rates whenever there is a large capital outflow.

The biggest problem with an artificial rising schedule of interest rates, whether it comes from a misguided design of the base rate or from the penalty feature of the seven measures announced on Sept 5, is that it is not related to the demand of the market. **There is no linkage between the credit demand of the market and the monetary base upon which the Hong Kong currency board is based.**

Consequently, the rising interest rate schedule is at best **an arbitrary approximation** of how interest rates should rise in response to a capital outflow if the domestic credit demand is strong.

At worst, it can be directly contradictory to the intent of a currency board in the current recession environment even if there is full confidence in the currency board. If the current local investment opportunity is unattractive and the demand for credit is low, the normal response under a currency board system is that **domestic interest rates would fall and capital should flow out** until demand equals supply. **If the local recession is met with an artificially high interest to prevent capital from flowing out, it only acts to put the local economy in double jeopardy and deepen the recession.**

All these contradictions arise because the government lacks a comprehensive plan to deal with the financial crisis. Instead of the fire-fighting approach, the government should have a comprehensive plan with a macroeconomic vision.

6. Possible Solutions

a. Reconstruct the currency board

The HKMA must start with reconstructing the currency board consistent with the current technology in banking. **Based on the current RTGS system in Hong Kong, the contractions and expansions of the monetary base are not linked to the credit demand in the economy.** As such, the interest rate fluctuations depend on the clearing needs of the banking system (rather than the supply and demand for credit in the economy) with potentially disastrous consequences.

Therefore, the HKMA should establish a linkage between the existing credit creation in the banking system and the monetary base. A draft proposal was forwarded to the HKMA on 24 Oct 1998 addressing this issue. It should be considered as a general concept rather than a final plan as many variations of the proposal can also accomplish the same goal. **The key concept is that the supply and demand signals can be transmitted with market mechanism involving the monetary base.** With this in place, the interest rate fluctuations would induce the correct currency supply changes in response to the currency demand.

b. A transparent and comprehensive plan for the foreign currency reserves.

Once the monetary base is tied to the credit creation in the economy, we can precisely determine the size of the monetary base necessary to support the existing level of credit. We can then allocate the current foreign currency reserves into its functional categories. For example, if a monetary base of US\$22Bn can support the existing credit level in the banking system, then we can allocate the current foreign currency reserves of US\$86Bn into:

- (i) US\$12Bn to back the notes and coins in circulation
- (ii) US\$22Bn for the monetary base
- (iii) US\$30Bn for contingencies
- (iv) The remaining US\$22Bn is the excess foreign currency reserves that can absorb an equivalent capital outflow without noticeable effect on the economy.

Once the rules and allocations are clearly set and transparent, the market knows how to react to different scenarios and will not get into unnecessary panics in response to minor outflows (such as those in Oct 1997) that are inconsequential to the functioning of the Hong Kong economy.

7. A Stable Foundation without Government Interventions

Hong Kong has always had sound fiscal policies, well-regulated banks, no foreign debts and a huge foreign currency reserves. Once we reconstruct the currency board properly and the currency is stabilized, the government can get out of unnecessary market interventions and allow the industrious people of Hong Kong to do the rest.