CB(1)461/98-99(02)

Legislative Council Panel on Financial Affairs
Mechanism on defending the linked exchange rate system
Meeting on 14 November 1998

Summary of Views

Professor Tsang Shu-ki
Department of Economics
Hong Kong Baptist University

1. I wish to highlight my major viewpoints here. For some of the more detailed analysis and arguments, Members please refer to the attached Technical Note. In general, I support the seven technical measures related to the linked exchange rate system and the thirty proposed measures on the securities and futures markets. However, most of those measures could have been implemented and put forward **earlier**. If they had, the Hong Kong economy would have had to shoulder less adjustment costs as a result of high and volatile interest rates, as well as the negative impact of “double market play” by speculators. The need for the Hong Kong Government to intervene in the stock and futures markets, which I supported with some qualifications, might not even have emerged.

2. As a currency board arrangement (CBA), the linked exchange rate system was **flawed** before the seven technical measures because there was no effective **currency arbitrage mechanism** that directly harnessed market force to stabilize the exchange rate. When the Hong Kong dollar was under pressure, the Hong Kong Monetary Authority (HKMA) had to resort to the **manipulation** of interbank liquidity and interest rates as well as **discretionary intervention** in the foreign exchange market.

3. The seven technical measures represented **a notable reform** in the operation of Hong Kong’s CBA, which is now very **different** from the linked exchange rate system of October 1983. The original design of the system is hopelessly out of tune with rapidly changing financial reality. Surprisingly, very few analysts and commentators realize this. It perhaps shows how technically complicated the issues are.

4. The seven measures implemented by the HKMA in September 1998 consisted of two major moves. The first was the **Convertibility Undertaking** covering the Hong Kong dollar balances of licensed banks with the HKMA. The second was the establishment of the **Discount Window.** Both moves were in principle consistent with my recommendation of the **AEL (Argentina, Estonia**

and Lithuania) model, which I made to the SAR Government in its consultation exercise with academics. The ***Report on Financial Market Review*** was published by the Financial Services Bureau in April 1998. If I may quote from the Report:

"...... Professor Tsang Shu-ki ..... suggests that Hong Kong should follow the .... currency board system as practised in Argentina, Estonia and Lithuania .... Specifically,

(a) Professor Tsang proposes that the convertibility at the fixed rate of 7.80 should be extended from banknotes to the entire monetary base. In other words, the exchange rate at which the HKMA undertakes to buy and sell US dollars against the Hong Kong dollar clearing balances of licensed banks will be entirely transparent, passive and be fixed at 7.80; and

(b) as the aggregate clearing balance maintained by licensed banks with the HKMA is very small, ..., even small flows of funds into and out of Hong Kong dollar, ..., would cause sharp volatility in interest rates if measures set out in (a) is implemented....... Recognizing this, Professor Tsang also proposes creating a cushion for the management of interbank liquidity, by the introduction of statutory reserve requirements with averaging provisions over a period of time." (Paragraph 3.64)

The ***Report*** then went on to reject my proposals. There was apparently a change of mind on the part of the Government in launching the seven technical measures in September 1998. The Convertibility Undertaking covering Hong Kong dollar bank balances with the HKMA was clearly a variation of my proposal (a), which is the crux of the AEL model. The difference is that the HKMA has yet to allow banks to convert US dollars into Hong Kong dollars according to the fixed rate. In other words, the Undertaking is as yet only one-way.

5. To dampen interest rate volatility, the HKMA opted for a discount window instead of my suggestion of deposit reserve requirements. I have no strong objections to that choice. The whole idea behind my proposal of reserve requirements is to enlarge the monetary base, so that capital movements would not generate undue interest rate impact even as the spot exchange rate can be firmly anchored by the Convertibility Undertaking. If a discount window serves that purpose well, let us try it.

6. For the remaining technical problems after the seven measures, my recommendations are as follows.

(a) The determination of the Base Rate in the Discount Window: I suggest to adopt the "risk-premium targetting" approach. The US Federal Funds Target Rate should be used as a benchmark and a premium should be added to it to reflect the Hong Kong dollar risk. The premium may be adjusted in the light of market conditions through a rule, e.g. according to the average differential between overnight HIBOR and LIBOR in the previous month. The merit of this approach is that it is transparent and non-manipulable.

(b) The exchange rate of the Convertibility Undertaking: It now stands at 7.75. One option is to change the exchange rate for Certificates of Indebtedness for issuing notes from 7.80 to 7.75 as well. Alternatively, the HKMA can implement a "disciplined" 500 calendar-day slide back to 7.80, under which the rate devalues by "one pip a day", with a two-way Convertibility Undertaking covering the Aggregate Balance (allowing also the conversion of US dollars into Hong Kong dollars).

7. The Convertibility Undertaking is perceived by some to generate a "new" risk for Hong Kong's CBA. This may or may not have been a reason behind the HKMA's belated adoption of the AEL model. Nevertheless, careful analysis reveals that the fear is exaggerated. In the absence of the Convertibility Undertaking, the HKMA has to intervene in the foreign exchange market to stabilize the Hong Kong dollar, and US dollar reserves are lost directly. Actually, the HKMA **alone** has to face the whole community of speculators and sceptical investors, **without the help of arbitrageurs in the banking sector.** If there is a capital flight from Hong Kong and the Government sticks to the fixed exchange rate, the loss of reserves will be mainly borne by the Government.

8. With the Convertibility Undertaking, interbank currency arbitrage will ensure that the spot exchange rate is firmly fixed. This should be very useful in boosting confidence. While licensed banks will be under competitive pressure to extend the benefit of the Undertaking to non-bank customers, they have to obtain the right amount of Hong Kong dollar funds in the form of a component of the monetary base (banknotes, balances with the HKMA, or Exchange Fund Paper) before being able to convert with the HKMA on behalf of their customers. The cost of obtaining such funds will rise rapidly. It may be more economical for the banks to sell their own foreign currency assets to the customers. Hence the loss of foreign exchange reserves as a result of a capital flight from Hong Kong will be **more evenly shared** between the Government and the banking sector.

9. In sum, the seven technical measures have provided the corner stone for a strengthened CBA in Hong Kong, even if belatedly. While the HKMA should improve the system in several operational areas, I see little urgency to augment it by new mechanisms that purport to show the authority's **determination** in defending the link. That determination is clear enough. Any lingering doubts in the market are not about official intention and ability but about the **appropriateness** of the rate of 7.80 in a possibly deteriorating economic environment. The latter concern cannot be totally eliminated and may be reflected in the form of higher risk premium in interest rates again.

10. Finally, let me comment on the suggestion that the Exchange Fund Investment Limited (EFIL) should unload, as quickly as possible, the equity portfolio that the Government acquired in its intervention in August 1998. I should emphasize that I am speaking in my personal capacity, rather than as a Board Member of EFIL. The intervention was no doubt very controversial. I supported it because I agreed that a credit crisis might have unfolded if a downward spiral of share and property prices had formed, threatening the stability of the banking system and pushing the economy down the abyss. However, I was, and am, of the opinion that the intervention might not have been necessary, if the Government had proceeded with the necessary reforms in the exchange rate system first. In any case, the doomsday scenario predicted by many critics did not materialize. Now, to sell the portfolio quickly, just in order to satisfy the ideological inclination of believers in "free market economics", would be a very irresponsible behaviour on the part of EFIL.

11. The mission for EFIL is simple. It is to dispose the shares in an orderly manner, without disrupting the market. The company is obviously looking for value-added opportunities in selling, and it does not wish to lose money on behalf of tax payers. However, its target is not profit maximization, especially if that adds volatility to the market. It is not supposed to engage in active trading at all. Hence, the optimal strategy is clear: do it cautiously, and, if necessary, slowly.

12. The tightening of liquidity in the stock market is in my personal view an opportunity for listed companies to issue shares. Of course, it is up to the companies to price the new shares appropriately. EFIL could provide liquidity by disposing portions of its portfolio. However, I think that it has to be careful and should avoid unleashing so much liquidity that downward pressure on the market becomes endemic again.

Legislative Council Panel on Financial Affairs
Mechanism on defending the linked exchange rate system
Meeting on 14 November 1998

Technical Note on the Seven Technical Measures

Professor Tsang Shu-ki
Department of Economics
Hong Kong Baptist University

Introduction by way of conclusion

1. Let me start by stating my conclusion. The seven technical measures related to the linked exchange rate system and the thirty proposed measures on the securities and futures markets, announced in early September 1998, were in general the **right** moves towards the restoration of financial order in Hong Kong. However, I think that most of these measures could have been implemented and put forward **earlier**. If they had, the Hong Kong economy would have had to shoulder less adjustment costs as a result of high and volatile interest rates, as well as the negative impact of "double market play" by powerful speculators. The Hong Kong Government might not even have had to intervene in the stock and futures markets, which I supported with some qualifications (Tsang, 1998b).

2. As far as the link as a currency board arrangement (CBA) is concerned, it was **flawed** before the seven technical measures because there was no effective currency arbitrage mechanism that directly harnessed market force to stabilize the exchange rate, similar to the practice of the old gold standard or according to the basic principles of the currency board system as a genre. The Hong Kong Monetary Authority (HKMA) had to resort to the manipulation of interbank liquidity and interest rates as well as discretionary intervention in the foreign exchange market, when the Hong Kong dollar was under pressure.

3. The seven technical measures, in particular the Convertibility Undertaking, represented **a notable reform** in the operation mechanism of Hong Kong's CBA, which, with the cumulative changes over the years, is now a very **different** animal compared with the linked exchange rate system of October 1983. The original design of the link is hopelessly out of tune with modern financial reality. Surprisingly, very few analysts and commentators realize this. It perhaps shows how technical the issues are.

4. I welcome the seven measures by the HKMA, as they established in Hong Kong a CBA with an effective currency arbitrage mechanism to fix the spot exchange rate and a reasonable liquidity pool to dampen interest rate pressures. Although several technical problems remain, those measures have been instrumental in bringing exchange rate and interest rate stability to Hong Kong. The improvement in the external economic environment has certainly also helped. Again, my view is that the seven measures had no special technical difficulties to surmount and could have been launched earlier. Nevertheless, as I said, they represented a major reform and involved considerations of principles on the design of a CBA, which might be regarded as controversial. That may or may not have been a reason for the HKMA to launch them later rather than earlier.

5. Overall, the seven technical measures have provided the corner stone for a strengthened CBA in Hong Kong, even if belatedly. While the HKMA should rationalize the system in several operational areas, I see little urgency to augment it by new mechanisms that purport to show the authority's **determination** in defending the link. That determination is clear enough. Any lingering doubts are not about official intention and ability but about the **appropriateness** of the rate of 7.80 in a possibly deteriorating economic environment. The latter concern cannot be totally eliminated and may be reflected as higher risk premium in interest rates again.

<u>The seven technical measures and the AEL model</u>

6. The seven measures implemented by the HKMA in September 1998 can be categorized into two major moves. The first was the **Convertibility Undertaking** covering the Hong Kong dollar balances of banks with the HKMA. The second was the establishment of the **Discount Window.**

7. Both moves were in principle consistent with my recommendation of the **AEL (Argentina, Estonia and Lithuania) model** of modernized currency board arrangements (CBAs), which I made to the SAR government in its consultation exercise after the speculative attack on the Hong Kong dollar last October (Tsang, 1998a). The consultation resulted in the ***Report on Financial Market Review*** published by the Financial Services Bureau in April 1998. If I may quote directly from the ***Report***:

"...... Professor Tsang Shu-ki of Baptist University suggests that Hong Kong should follow the .... currency board system as practised in Argentina, Estonia and Lithuania .... Specifically,

(a) Professor Tsang proposes that the convertibility at the fixed rate of 7.80 should be extended from banknotes to the entire monetary base. In other words, the exchange rate at which the HKMA undertakes to buy and sell US dollars against the Hong Kong dollar clearing balances of licensed banks will be entirely transparent, passive and be fixed at 7.80; and

(b) as the aggregate clearing balance maintained by licensed banks with the HKMA is very small, given in particular an efficient real time interbank payment system, even small flows of funds into and out of Hong Kong dollar, ..., would cause sharp volatility in interest rates if measures set out in (a) is implemented....... Recognizing this, Professor Tsang also proposes creating a cushion for the management of interbank liquidity, by the introduction of statutory reserve requirements with averaging provisions over a period of time." (Paragraph 3.64)

8. The ***Report*** then went on to reject my proposals. In any case, the seven technical measures announced on 5 September 1998 reflected a change of mind. It seems clear to me that the Convertibility Undertaking was a variation of my proposal (a), i.e. the core of the AEL model, other than that the fixed rate chosen was 7.75 instead of 7.80, and that the Undertaking was one-way (from Hong Kong dollars to US dollars, not the other way round). Nevertheless, the HKMA has made it clear that it wants to move the rate back to 7.80 in the future. Providing a two-way Undertaking should also incur little technical complications.

9. To reduce interest rate volatility, the HKMA did not adopt my proposal (b) on deposit reserve requirements. Instead, it opted for a discount window. I have no strong objections to that choice, although setting the base rate for the discount window is a tricky issue. The whole idea behind my proposal (b) is to enlarge the monetary base, so that capital movements would not generate undue interest rate impact even as the spot exchange rate can be firmly anchored by the Convertibility Undertaking. If a discount window serves that purpose well, let us try it.

<u>A notable change in the design of Hong Kong's CBA</u>

10. Why did the HKMA wait until September 1998 to implement the seven technical measures, especially the Convertibility Undertaking? Only the HKMA will know the true answer. What I want to say here is that the Undertaking actually represented a notable change in the design of Hong Kong's CBA. Hence, while the measures involved few technicalities, they did touch on matters of principles. Perhaps the HKMA had rather different considerations on that front.

11. A Convertibility Undertaking by the monetary authority on the whole monetary base, instead of just the cash base as in the classical currency board system practiced mostly by former British colonies, means that currency arbitrage between the market exchange rate and the official rate can be carried out electronically via interbank settlement with the monetary authority. The hazard of moving cash around can be avoided. Arbitrage efficiency would be tremendously enhanced, particularly for a modern financial economy with minimal cash holdings (where notes-based arbitrage is a non-starter). Under the AEL model, no banks would dare to quote an exchange rate that deviates from the pegged rate, lest they will be hit electronically by other banks (Tsang, 1998c).

12. The beauty of such a system is that it directly harnesses self-interested market force in defending the exchange rate, and it sets investors/speculators against each other. All the monetary authority needs to do is to guarantee the convertibility of the monetary base, and the interbank market will do the rest of the job in “fixing” the spot exchange rate. This is similar to the self-adjusting mechanism of the old gold standard, under which market participants shipped gold bullion across the Atlantic Ocean to perform arbitrage between the British pound and the US dollar. It is different from discretionary market intervention by a central bank, in which case the central bank **alone** will have to face all the speculators or nonbelievers, without the help of arbitrageurs in the banking system.

New risk in the Convertibility Undertaking?

13. However, a Convertibility Undertaking may be perceived to involve a “new” risk, compared with discretionary intervention by the monetary authority. Although the Undertaking covers nominally the monetary base and applies only to licensed banks, the banking sector will be under pressure to **extend** it to non-bank customers. While some banks may not be willing to do so, interbank **competition** will make it rather difficult for them to refuse offering the service.

14. An example will serve to illustrate this point. Suppose Bank A is reluctant to extend the Undertaking, and quotes a rate of 7.90 to a non-bank depositor as a disincentive (which is equivalent to a surcharge of 10 HK cents per US$ of transaction), instead of the rate 7.80 of the Convertibility Undertaking and that prevailing in the interbank market (which may show a narrow spread, say 7.7998 - 7.8002). The depositor needs not sell HK dollars to Bank A. Instead, he looks around and there is bound to be a Bank B, which is willing to quote the rate of 7,8005, or even 7.8002. He then asks Bank A to transfer his HK dollar deposit to Bank B, which can convert the deposit at 7.80 in its clearing balance with the HKMA, earning a small profit. Bank A will lose HK dollar funds, and the

Exchange Fund under the management of the HKMA will lose US dollar reserves. Interbank interest rates may rise, but that directly affects only Bank A, not Bank B the facilitator. Any bank that refuses to take advantage of the Convertibility Undertaking on behalf of its customers has to think twice, as there are always competitors like Bank B around.

15. Let us go back to a situation where the monetary authority offers no Convertibility Undertaking on banks' balances with it, just like Hong Kong's CBA before the seven technical measures of September 1998. In a situation like that, licensed banks will not be in a position to help depositors obtain US dollars from the monetary authority at the fixed exchange rate. There is apparently no direct channel to generate a "run" on the official foreign exchange reserves. A Convertibility Undertaking, on the other hand, seems to open an express route to such a run. Pressures on the exchange rate will not be reflected in the spot exchange rate, as banks are bound by the discipline of electronic arbitrage. Pressures will instead be reflected more explicitly in a fall in the foreign exchange reserves of the monetary authority. I do not know whether this was a major factor in the HKMA's decision of not accepting the AEL model earlier.

16. If it was the case, I must say that I do not agree with the logic behind its reasoning. Discretionary intervention without an overt Convertibility Undertaking means that interbank currency arbitrage cannot be effectively carried out because there is no reference point. As a result, in the case of a currency attack, the HKMA has to face alone the whole community of speculators and sceptical investors, **without the help of the arbitrageurs.** The run on the official reserves may actually be more direct, as the HKMA would have to buy Hong Kong dollars sold in the market to stabilize the exchange rate. The "constructive ambiguity" and "elements of surprise" of a discretionary non-undertaking are not very useful, as everyone knows that the HKMA will do everything it can to defend the linked exchange rate system.

Beyond speculative attacks: scenarios under capital flight

17. The crucial test of a fixed exchange rate system is perhaps not its robustness against speculative attacks, but its strength in withstanding a massive **capital flight** involving even non-speculating investors and citizens. Whether there is a Convertibility Undertaking or not, to the extent that the public loses faith in the link, a capital flight will result in a fall of Hong Kong's foreign exchange reserves. The difference is that, with the Undertaking, interbank arbitrage will serve as the **first line of defence** to hold the spot exchange rate. This will absorb a good deal of pressure and may alleviate further outflow of funds. Without the

Undertaking, the HKMA will have to intervene in the foreign exchange market, and reserves will be lost directly.

18. With the Convertibility Undertaking, moreover, any loss of reserves arising from a capital flight is likely to be more evenly **shared** between the government and the banking system. Without the Undertaking, there may be little sharing of burden. The reason is simple. Although any bank can take advantage of the Undertaking on behalf of its depositors, it has to possess first of all the right amount of Hong Kong dollar funds to sell to the HKMA. For a bank, the funds must be in the form of a component of the monetary base, which, properly defined, should include cash, clearing balance with the HKMA, or Exchange Fund paper. The right amount of any one of these components is not always readily available to the bank. It may have to pay high cost to obtain the Hong Kong dollar funds to sell to the HKMA.

19. Hence, in a situation of a capital flight under the AEL model, a bank has two choices. First, it can take advantage of the Convertibility Undertaking and draw down Hong Kong's official foreign exchange reserves for customers. The cost incurred is that of obtaining the right amount of the monetary base, which rises rapidly. Second, the alternative is not to go to the HKMA for convertibility, but simply to let go portions of the bank's own foreign assets, by selling them to customers directly. That may be more economical for the bank. Overall, the bank has to make a balanced calculation. The probable result is that the loss of reserves arising from a capital flight would be **shared** between the government and the banking system.

20. Without a Convertibility Undertaking by the HKMA, a capital flight means that banks will sell Hong Kong dollars to each other in the foreign exchange market, and the exchange rate will fall, if the HKMA does not intervene. By intervening, the HKMA will lose reserves directly, and few banks will be around to share the burden with it because they are not confident in performing currency arbitrage without any benchmark exchange rate. Of course, domestic interest rates will also rise, and some banks may be induced to sell some of their foreign assets. But the effect will be more indirect.

<u>The road ahead</u>

21. I think that after the seven technical measures, the Hong Kong CBA has instituted a reasonable self-adjusting mechanism. Some technical problems remain, e.g., those about the one-way convertibility undertaking, the move back to the rate of 7.80, and further possible measures to dampen interest rate volatility.

22. With regard to the determination of the Base Rate in the discount window, I am in favour of “**risk-premium targetting**”, i.e., adopting the US Federal Funds Target Rate as a benchmark and adding on top of it a premium to reflect the Hong Kong dollar risk. The merit of this approach is that it is transparent and non-manipulable in nature. This would avoid the impression that the HKMA is implementing an active and discretionary monetary policy, like what other central banks are doing. Moreover, it would be difficult for speculators to engage in “double market play”. While the formula should not be too complicated, it should also not be too rigid. Hence the HKMA can use a rule that adjusts the “risk premium” in the light of market conditions, e.g., according to the average differential between overnight HIBOR and LIBOR over an extended period, say in the previous month.

23. As to the exchange rate of the Convertibility Undertaking, which now stands at 7.75, one option is to change the exchange rate for Certificates of Indebtedness from 7.80 to 7.75. Such a move should have minimal impact on the foreign exchange and money markets. After all, in the previous currency board system of Hong Kong in 1935-1972, the Hong Kong dollar was once revalued against the pound in November 1967 by 10%. A revaluation of 500 pips (0.64%) now should be no big deal. Parliamentary laws in Argentina and Estonia also allow for revaluation.

24. If that option is deemed undesirable, for whatever reasons, an alternative is a sliding devaluation programme back to 7.80 over a period. While an extended programme produces smaller interest rate premium effect, which is what Hong Kong needs, investors and speculators might question, rightly or wrongly, the ability of the HKMA to “manage” the lengthy slide, especially if the official rate and the market rate move in different directions. Given the latest, and less depressing, developments in Hong Kong and around the world, that risk might be regarded as small and tolerable, although things could change fast. Overall, I am not against a “disciplined” **500 calendar-day slide,** with a two-way Convertibility Undertaking covering the Aggregate Balance.

25. Other than these further modifications, there is not much need to add new defence mechanisms to it that involve explicit costs of showing the authority’s determination. The reason is simple: irrespective of whether these new mechanisms can work or not, or whether they would bring new risk to the system, any lingering doubts on the Hong Kong dollar link now seem to have little to do with the authority’s determination.

26. Such lingering doubts are about whether the rate of 7.80, no matter how perfectly defended, is appropriate in a situation of global depression and

competitive devaluations. In other words, they are about the **appropriateness** of the fixed exchange rate rather than the **intention and ability** of the authority to defend it. Even assuming that the HKMA might have 100% reserves for HK dollar M3 (which is not the case), it could still be foolhardy for it to keep to the peg of 7.80, if every other currency depreciated against the US dollar by a further 50%! While that scenario seems extreme and is therefore rather unlikely, one can imagine less extreme and more likely situation, e.g. the lack of improvement (or continuous deterioration) in the external environment and the persistence of economic contraction and high unemployment in Hong Kong. There are bound to be sceptics who think that the SAR government may choose devaluation to ease the pain. If there are enough of these sceptics, the risk premium in the local interest rates will rise again.

27. Of course, things may also turn for the better. If US interest rates continue to decline and the US dollar further softens, the worst of the East Asian crisis could be over. A depreciation of the US dollar means a *de facto* devaluation of the Hong Kong dollar against other currencies. Should that benign scenario persist, the seven technical measures would be enough to see Hong Kong through the subsiding storm.

References

Tsang Shu-ki (1998a), "The Hong Kong Government's Financial Market Review Report: An Interpretation and A Response", article placed on the Hong Kong Baptist University web site: www. hkbu.edu.hk/~econ/tsang.html, 4 May.

Tsang Shu-ki (1998b), "Why I Support the Hong Kong Government's Stock Market Intervention", article placed on the Hong Kong Baptist University web site: www. hkbu.edu.hk/~econ/tsang.html, 25 August.

Tsang Shu-ki (1998c), "The Case for Adopting the Convertible Reserves System in Hong Kong", Pacific Economic Review, Volume 3, Number 3, October, pp. 265-275.