Comments on “Currency Options and Central Bank Operations
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The paper, “Currency Options and Central Bank Operations”, provides a useful review of the various issues concerning the use of currency options in central bank operations, particularly in the framework of the Hong Kong’s currency board.

I recall discussing these same issues with my colleagues at the HKUST, in the months of November and December, 1997. They should share with me any credit for the insights, but not errors, in this comment.

Is option writing by the central bank stabilizing?

In discussing whether option writing by the central bank has a stabilizing effect, the paper analyzes the motives and actions of different players in the market. Its conclusion is that option writing by the central bank has a stabilizing effect because it displaces the destabilizing dynamic hedging activity. I agree with the conclusion, but to make the point more clearly, I would focus the discussion more on the demand and supply picture, looking at who demand the options and who can supply them.

If there is a demand for options to hedge the devaluation risk, how much it will be met and at what price depends on two factors. First, are there natural counterparties who will assume the risk for a reasonable price? Second, what is the technology of shifting the risk from those who want to hedge it to those who can assume it? Derivatives trading and dynamic hedging fall in the second category as they allow risk transfer to take place, with varying degrees of efficiency. Assume we have the reasonable risk-transfer technology, the first question is the key question. Who are the natural suppliers of the insurance to those who want it?

Without the central bank playing a role, the options are supplied either by those who assume the risk outright, or investment banks who try to lay off the risk by dynamic hedging in the currency forward market. There is probably a limited number of investors in the first category who have a natural position of taking the currency risk. The hedge will probably have to be supported by a dynamic hedging program. Since dynamic hedging is costly, that would probably make the currency put option expensive, limiting the size of the market.
Thus I do not find it convincing to try to estimate the extent of dynamic hedging activity in Hong Kong, as this paper does, to see whether it would be useful for the central bank to supply the put options. When hedging was expensive we probably saw limited hedging activity. However, when the Hong Kong dollar is under severe attack, the un-hedged investors may trade in a panic to limit their risks. It is this kind of destabilizing trade that we may also want to prevent.

The central bank’s entry to the market will expand the supply of the put options. As in any market, demand for hedging must be met with the supply, and the price of the hedging service (i.e., the premium of the put option) is determined by the demand and supply factors. As the central bank can supply the put options more cheaply, because it does not lay off its risk somewhere else, it will displace the dynamic hedging activity. Furthermore, as the put option costs less because it can be provided without the dynamic hedging cost, more hedging demand can be met, which also has a stabilizing effect on the market.

One more speculative vehicle?

The paper argues that a downside to a central bank option programme is that it gives speculators an additional avenue to attack the Hong Kong dollar. It notes that while speculators might prefer forwards to options in general (meaning for cost reason, I assume), it is subject to a counterparty credit constraint in the forward market, but not in the option market.

If the speculator uses options rather forwards, he will buy the put option, hoping to make a profit in the event of devaluation. He has to pay the premium, and will lose the time value of the option if the Hong Kong dollar does not devaluate. This seems to me to be quite an expensive strategy, comparing with using forwards.

Is it option? Is it not option?

The paper argues that the Hong Kong dollar put option is different from the Convertibility Undertaking. In the same vein, it argues that the Convertibility Undertaking is different from the structured note proposal from Merton Miller. It states that unlike a currency option, the Convertibility Undertaking is neither transferable nor marketable, though banks may offer similar convertibility undertakings to their customers given the assurance provided by the HKMA.

What is an option? An option is defined by the nonlinear payoff structure such as those in Figure 1 in this paper. Transferability and marketability are not the characteristics of an option. Callable bonds, convertible bonds, structured notes are examples of securities with embedded options which are not traded separately. Fixed rate mortgages allowing prepayment, popular in the United States, are examples of a nontransferable obligation with the homeowner holding a call option. The prepayment option is a valuable option to the mortgage holder and it makes the market more complete, contributing to the popularity of fixed-rate mortgages in the United States. Whether the option is tradable or not, it can be analyzed and priced by the option pricing model, and, more importantly, it can have real impact on economic behaviour.
It is important to see that, as this study points out, the convertibility undertaking can be transferred to the customer. I recall the discussion we had on this point at the HKUST. We concluded that there were many equivalent ways the central bank could provide the guarantee, or option. In the first proposal by my colleagues Naifu Chen and Alex Chan to defend the Hong Kong dollar, they called for setting up a US dollar liquidity adjustment facility. Under the scheme, banks can access a US dollar LAF provided if they have the eligible collateral, such as Exchange Fund bills. They borrow US dollars but can choose to repay the loan with interest in US dollars, or Hong Kong dollars at the guaranteed pegged exchange rate. Essentially there is a Hong Kong dollar put option embedded in the Exchange Fund bills. In subsequent discussion, we recognized that commercial banks could sell these options to their customers. In equilibrium, the embedded options in the Exchange Fund bills may be traded in different forms and held by different investors in the economy.

For the same reason, the structured note proposed by Merton Miller is similar to embedding the dollar put option on the Exchange Fund bill. In this regard, I do not agree with this paper’s discussion of why the Exchange fund paper with the convertibility undertaking is not a structured note. It argues that the market does not appear to perceive the Exchange Fund paper as a form of structured notes, as the yield spread between the EFBN and UST is still considerable. (Shown in footnote 21, the yield spread measured in terms of a 5-year paper, declined from 450 bp in early September 1998 to around 40 bp in early March 2000.) I would regard the drop in the yield spread as remarkable!

The paper states that since no premium is charged to licensed banks for the right of convertibility in the Exchange Fund paper, that convertibility feature should not be equated with an option. Further, under the Hong Kong law, for an agreement to be legally binding on the contracting parties, there must be a consideration. But, again, since the option is embedded in the Exchange Fund Bill, the premium is paid implicitly in the form of a lower yield, when compared to equivalent bonds without the convertibility feature. Licensed banks do pay the premium for the convertibility in the form of lower yields, which in my view would constitute a consideration.

**Conclusion**

The dollar put option scheme studied by the proposal will considerably expand the guarantee, in both size and the counter-party scope, already provided by the current currency board arrangement. Given the current market condition, the Convertibility Undertaking appears to be sufficient, and as long as it is kept, and seen to be kept, there is no immediate need to implement the put option scheme. However, given its many desirable benefits, the dollar put option scheme does deserve further review. In particular, the practical aspects of introducing the scheme should be studied.

I hope this comment further shows that there are more similarities than differences among the different proposals that have been made to strengthen the currency board, including this study, and the actual change introduced in September 1998. It is comforting to know that there is a common logic in these different schemes.