Foreign exchange market operations and reserve management: the recent experience of Hong Kong

Hong Kong Monetary Authority

Abstract

This note reviews the recent experience of the Hong Kong Monetary Authority's foreign exchange market operations and illustrates why such operations are a passive and mechanical process under the currency board arrangement. This note also discusses whether Hong Kong is well prepared for capital outflows following massive inflows that began in 2008, and concludes by discussing the rationale of the Hong Kong Monetary Authority's reserve management.

JEL classification: E52, E58, N1

Keywords: linked exchange rate system, convertibility undertaking, exchange rate system credibility, reserve management

1. Introduction

Since the Linked Exchange Rate System (LERS) has been in operation since 1983, it has undergone two major refinements, namely the "seven technical measures"[1;] and "three refinements"[2]. The latter has brought the Hong Kong dollar exchange rate regime into a narrow-band target zone with a currency board arrangement. Through these changes, the system has evolved into a simple and rules-based system with a high degree of credibility and transparency. Given that the LERS has experienced both capital inflows and outflows since 2008, this note investigates how the rules-based mechanism of LERS works under such capital flows and whether Hong Kong is well prepared for capital outflows. This note finishes by discussing the Hong Kong Monetary Authority (HKMA)'s approach in reserve management.

2. Overview of the current system and recent LERS operation

2.1 Overview of the system

The Currency Board in Hong Kong requires the monetary base (MB) to be fully backed by foreign currency reserves.[3] This means that any changes in the MB are fully matched by corresponding changes in foreign reserves at a fixed exchange rate. In fact, the MB has historically been more than fully covered by the reserve assets (Graph 1). This greater than 100% reserve backing represents a powerful insurance for the HKMA's ability to defend the LERS, significantly enhancing the system's credibility.

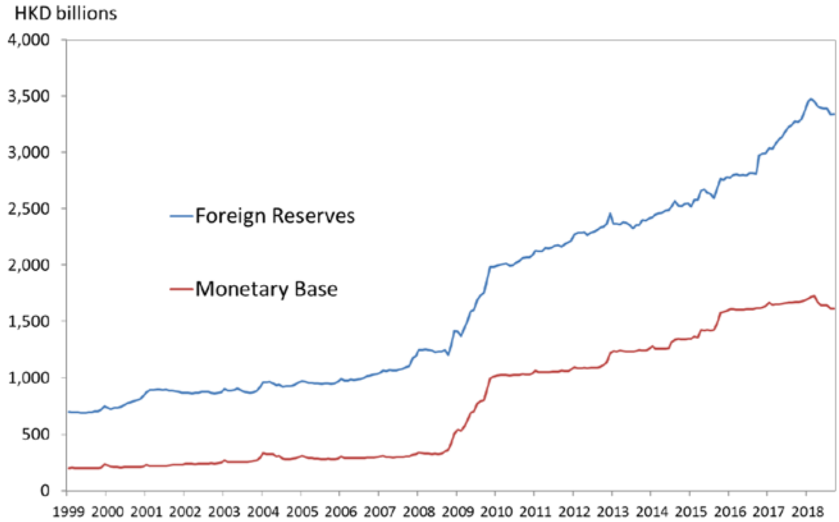
Under the LERS, interventions in the currency market are a mechanical and passive process of the HKMA. When there are capital inflows (or outflows) in Hong Kong, causing the exchange rate to rise (or fall) to the extent that it touches the boundaries of the Convertibility Zone, the Convertibility Undertakings (CUs) are triggered. Upon requests from banks, the HKMA would undertake to buy US dollars from licensed banks at HK$7.75 to US$1 (under strong-side CUs) and sell US dollars at HK$7.85 to US$1 (under weak-side CUs). The CUs are available to all licensed banks in Hong Kong, including their overseas offices outside Hong Kong. The HKMA offices in Hong Kong and New York jointly provide 24-hour coverage of the CUs. These interventions cause the MB to expand (or contract), putting downward (or upward) pressure on interbank interest rates, which in turn counteract the original capital flows to ensure that the exchange rate remains stable. In other words, it is interest rates, rather than the exchange rate, that adjust to capital inflows and outflows in Hong Kong under the LERS.

1 See Hong Kong Monetary Authority (1998) for details.

2 See Hong Kong Monetary Authority (2005) for details.

3 The MB consists of certificates of indebtedness, notes and coins in circulation, the aggregate balance of the banking system in Hong Kong, and outstanding Exchange Fund Bills and Notes (EFBNs).

Foreign reserve assets of the HKMA and MB in Hong Kong — Graph 1



Source: HKMA

2.2 LERS operation and triggering of strong-side CUs during late 2008–2015

Graphs 2 and 3 illustrate the HKD exchange rate, HIBOR-LIBOR spreads, MB and the aggregate balance (AB) of the Hong Kong banking system. As both HKD and USD interest rates approached the zero lower bound after the Global Financial Crisis (GFC), their negative interest rate differentials narrowed considerably, which diminished the carry trade activities and were unable to provide a counteracting force against the strong demand for the HK dollar. As a result, the HKD exchange rate strengthened considerably, with repeated triggering of the strong-side CUs from late 2008 until 2015. These continuous inflows amounted to US$130 billion or HK$1 trillion and can be attributed to our stable banking system and positive outlook.

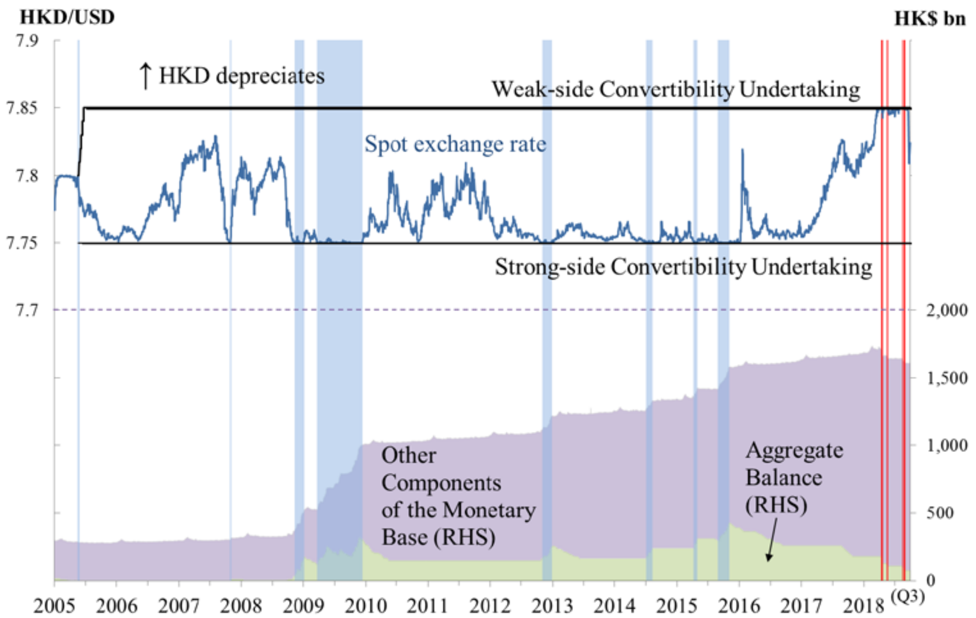
2.3 LERS operations during US rate hikes and triggering of weak-side CUs

Following the United States' rate hike in December 2015, the spread between the HKD and USD interest rates began to widen, but not large enough to induce sufficient carry trades to exert downward pressure on the HKD exchange rate.[4] After pausing for a year, the Fed brought rate hikes back on track in December 2016 and raised its policy target to 2%–2.25% as of September 2018. The sufficiently large enough negative interest rate differential eventually attracted more selling HKD pressure from carry trades, which counteracted the demand for the HK dollar induced by equity related fund inflows and gradually pushed the exchange rate towards HK$7.85. The weak-side CU was triggered on 12 April 2018 for the first time since it was set at this level in May 2005.

[4] The sharp movement from HK$7.75 towards HK$7.8 in January 2016 in Graph 2 was mainly due to the short-term turmoil in emerging market exchange rate markets.

HKD spot exchange rate, MB and AB

Graph 2

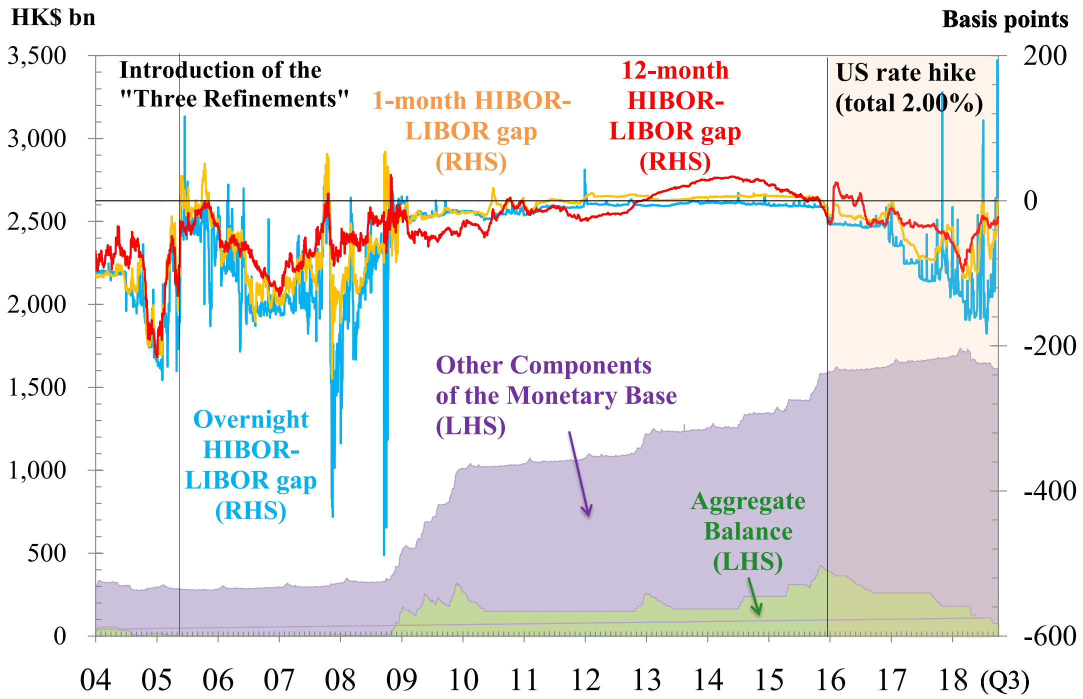


Note: Blue- and red-shaded lines in the chart represent the triggering of the strong and weak-side CUs respectively.

Source: HKMA.

HIBOR-LIBOR spreads, MB and AB

Graph 3



Sources: Bloomberg and HKMA.

With the weak-side CUs triggered repeatedly in April, May and August 2018, the HKMA purchased a total of HK$103.5 billion from the market. The AB subsequently reduced to HK$76.6 billion, which created a more conducive environment for HKD interest rate normalisation. As HKD interest rates increase, the negative interest rate spreads narrow, which slows down capital outflows and maintains the HKD exchange rate stability within the band. The HKD foreign exchange and money markets continued to function smoothly and in an orderly manner throughout the weak-side CU operations, which have been effective in maintaining the stability of the HK dollar.

3. Is Hong Kong well prepared for outflows?

Under the currency board system, the entire MB is backed by USD liquid assets; the HKMA is fully capable of meeting the CU requests and maintaining the stability of the HKD exchange rate. It is worth noting that the cumulative outflow of HK$103.5 billion since the first triggering of weak-side CU in April 2018 only represents around 10% of the total inflows of HK$1 trillion recorded since 2008. Moreover, it is expected that the kind of financial stress that Hong Kong experienced during the Asian financial crisis in 1997/98 is unlikely to repeat for the following reasons:

- **The resilience of Hong Kong's monetary system has greatly enhanced:** prior to the enhancements in 1998, our MB was comprised of only currency in circulation and the AB, which was relatively small and volatile, meaning domestic interest rates were more sensitive to fund flows. With the inclusion of the Exchange Fund Bills and Notes (EFBNs) in the MB in 1998 and the substantial inflows in the last few years, our MB now stands at over HK$1.6 trillion even after the last round of outflows. This is almost eight times larger than the level in 1998. It is now much harder to attack the peg through spiking HKD interest rates by shorting the HK dollar**.**

- **Strong financial buffers:** at end-October 2018, Hong Kong's foreign currency reserve assets amounted to over US$423 billion, representing about seven times the currency in circulation and twice the size of our MB, one of the highest levels internationally. Banks in Hong Kong are also well-capitalised, with the average capital adequacy ratio at 19.4% in June 2018, a very high level by international standards. These banks also held more than HK$4 trillion in highly liquid assets (over HK$3 trillion being foreign currency assets). These assets serve as a strong buffer during extreme cases of significant fund outflows within short periods of time. In addition, banks hold a sizeable amount – about HK$1 trillion – of EFBNs. When liquidity tightens, banks can use EFBNs to obtain HKD liquidity via the discount window. The HKMA also conducts stress tests on banks regularly to ensure they are capable of meeting such scenarios.

- **Strengthened market surveillance:** the HKMA continuously strengthens its surveillance efforts in view of changing market structure and developments. Based on our cross-market surveillance work, including in cooperation with the Securities and Futures Commission on the stock market, the HKMA does not see notable speculative positions on the HK dollar nor "double play" activities such as that Hong Kong experienced in 1997/98 (ie manipulation and profiteering in the money market and stock market through massive short-selling of the HK dollar and stock market).

- **High transparency of LERS operation**: Monetary operations under the LERS are carried out with a high degree of transparency. The HKMA makes constant efforts to educate the public about the system and provides market participants with relevant information about the rules governing its operation. Market operations conducted by the HKMA are announced immediately, with relevant data published daily. The HKMA also releases the meeting minutes of the Currency Board Governing Committee. Currency Board Account data and other relevant statistics are also published every month. This high degree of transparency gives the market confidence in the HKMA's operation and enhances the credibility of the system.

While it is understandable that people tend to feel more positive about fund inflows but a bit uneasy when it comes to outflows, it is important to note that Hong Kong is a fully open economy and financial hub with free capital movement. The HKD exchange rate may strengthen or weaken because of capital inflows or outflows. What really matters is the orderly operation of the LERS as designed, so that the HKD exchange rate remains within the range of HK$7.75 to HK$7.85 against the US dollar, thus maintaining market confidence in the robustness of the monetary and financial systems of Hong Kong.

4. A glimpse into the HKMA's foreign reserves management

In conducting the LERS operation through the CUs, the foreign reserves in Hong Kong will adjust with the corresponding changes in the MB. Meanwhile, the HKMA also accepts placements by fiscal reserves, government funds and statutory bodies from time to time. The HKMA, under the delegated authority of the Financial Secretary, manages the foreign reserves through the Exchange Fund. The Fund's statutory role, as defined in the Exchange Fund Ordinance (Chapter 66 of the Laws of Hong Kong), is primarily to affect, either directly or indirectly, the exchange value of the currency of Hong Kong. Its functions were extended with the enactment of the Exchange Fund (Amendment) Ordinance 1992 by introducing a secondary and subsidiary role of maintaining the stability and integrity of Hong Kong's monetary and financial systems, with a view to maintaining Hong Kong as an international financial centre.

To meet the objectives of preserving capital, providing liquidity to maintain financial and currency stability and generating an adequate long-term return, the Fund is managed as two distinct portfolios: (i) the Backing Portfolio ensures that the MB is fully backed by highly liquid US dollar-denominated securities, while (ii) the Investment Portfolio preserves the fund's value for future generations in Hong Kong.

It is noteworthy that the Fund is not a sovereign wealth fund or an ordinary investment fund, nor is it a hedge fund. As opposed to short-term trading, the Fund adopts a prudent asset allocation aimed at relatively stable medium- and long-term returns. Of the Funds' liabilities, over HK$1.3 trillion constitutes the MB and about HK$1 trillion belongs to fiscal reserves of the government and placements by various government and public funds. It is therefore imperative for the Fund to maintain sufficient liquidity to support the exchange value of the HK dollar by selling the US dollar when there are fund outflows, and to meet the cash needs of the government for public expenditure through the withdrawal of fiscal reserves. More importantly, we must have a robust armoury in terms of reserves to fend off unforeseeable shocks and attacks so as to maintain the financial stability of Hong Kong. Therefore, capital preservation and a high degree of liquidity are crucial. Because of these considerations, a substantial part of the Fund is invested in safe and highly liquid assets such as the US Treasury securities. Bonds and cash currently account for about 80% of the Fund's assets. The remaining 20% mainly consists of equities and, since 2009, a small portfolio called the Long-Term Growth Portfolio (LTGP) started investing in private equity and real estate investments. These investments had low return correlation with the conventional asset classes such as bonds and equities.[5] This helps spread risks and enhance the Fund's overall medium- and long-term returns. In addition to private equity and real estate, LTGP also started investing in infrastructure projects to broaden the spectrum of asset classes.[6]

5. Conclusion

The LERS has been the anchor of Hong Kong's monetary and financial stability for more than 30 years. It has stood the test of two major financial crises and it continues to function smoothly as a rules-based system with a high degree of transparency and credibility. The foreign exchange intervention through the CUs is passive in nature as it is upon the requests of licensed banks in Hong Kong, including their oversea offices. The resultant changes to the MB are automatically matched by changes in the foreign reserve assets.

To maintain the currency stability, the LERS inevitably requires a significant portion of Hong Kong's foreign reserves to invest in highly liquid US dollar-denominated securities. Although the Exchange Fund also carries the mandate of preserving the fund's value, which allows a more diversified approach in its investment portfolio, it is important to stress the investment principle of the Fund, which is "Capital Preservation First, Long-Term Growth Next". While remaining prudent, the HKMA will also be flexible and proactive in managing the Fund with a view to achieving a better long-term return.

5 The cap for the market value of investments under the LTGP is set at one third of the accumulated surplus of the Exchange Fund, with further capacity arising from the allocation of part of the Future Fund to long-term assets. For a more detailed description of the LTGP, see Yue (2015a, 2015b).

6 The typical investment profile of infrastructure projects is relatively stable cash flows with low loss ratios. The returns are less affected by economic cycles and have lower correlation with those of traditional assets. See Yue (2017, 2018) for an explanation as to why infrastructure investment is an attractive asset class for the Exchange Fund and a more detailed analysis on the risks and returns of infrastructure projects.

References

Hong Kong Monetary Authority (1998): Strengthening of Currency Board Arrangements in Hong Kong. HKMA Press Releases, available at https://www.hkma.gov.hk/-eng/key-information/press-releases/1998/980905.shtml

Hong Kong Monetary Authority (2005): Refinements to the Operation of the Linked Exchange Rate System. HKMA Press Releases, available at https://www.hkma.gov.hk/eng/key-information/press-releases/2005/20050518-4.shtml

Yue, E (2015a): The Long-Term Growth Portfolio of the Exchange Fund – Focusing on Future, Striving for Growth (part 1 of 2). HKMA insight article, available at https://www.hkma.gov.hk/eng/key-information/insight/20151214.shtml

Yue, E (2015b): The Long-Term Growth Portfolio of the Exchange Fund – Focusing on Future, Striving for Growth (part 2 of 2). HKMA insight article, available at https://www.hkma.gov.hk/eng/key-information/insight/20151216.shtml

Yue, E (2017): Infrastructure Investment – a Timeless Form of Investment. HKMA insight article, available at https://www.hkma.gov.hk/eng/key-information/insight/20170919.shtml

Yue, E (2018): Exchange Fund's Investment in Infrastructure – Creating Value by Adopting a Gradual and Prudent Approach. HKMA insight article, available at https://www.hkma.gov.hk/eng/key-information/insight/20181029.shtml