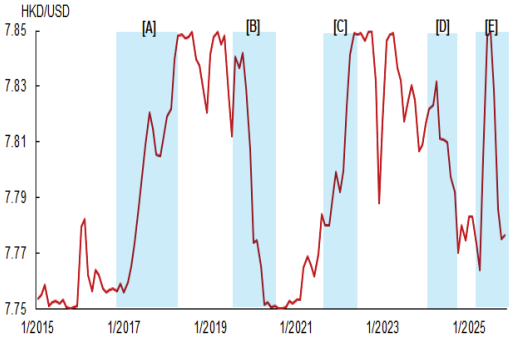
Annexes: Selected Issues

Annex 1. Inside the LERS: Why HKD Stability Can Coexist with Wide Rate Differentials[5]

Background and Recent Developments in Hong Kong's Exchange Rate

1. The Hong Kong dollar exchange rate has witnessed periods of relatively high fluctuations within the Convertibility Zone multiple times over the past decade. Operating under a Linked Exchange Rate System (LERS), the currency has remained stable within a narrow band of 7.75 to 7.85 to the US dollar. However, shifts in US monetary policy or significant changes in capital flow and market liquidity conditions have tended to amplify fluctuations within the designated range (Figure A1.1).

Figure A1.1. Hong Kong Dollar Exchange Rate



Source: HAVER; AMRO staff calculations
Note: HKD/USD denotes monthly average of HKD per USD.

Table A1.1. Episodes of Sustained Movement towards Strong-/ Weak-side

Episode	Event	HKD/USD (Monthly Average)
A	US interest rate hikes, widening positive LIBOR-HIBOR spread	7.758 (Oct 2016) 7.848 (June 2018)
B	Equity-related demand, negative USD-HKD interest rate spreads, heightened risk-off sentiment	7.811 (July 2019) 7.753 (July 2020)
C	Weak performance in equity market, widening positive LIBOR-HIBOR spread	7.781 (Sept 2021) 7.849 (June 2022)
D	US interest rate cuts, surge in local stock market activity	7.824 (March 2024) 7.771 (Oct 2024)
E	Equity market inflows, firming HIBORs	7.775 (March 2025) 7.782 (Dec 2025)

Source: Hong Kong Association of Banks; HKMA; AMRO staff calculation
Note: Figures in the third column show the exchange rate at the start and at the end of the episode.

2. In several episodes, there were sustained movements towards the strong- or weak-side of the Convertibility Undertakings (CU). Table A1.1 shows these episodes were primarily driven by a combination of US monetary policy and the resulting USD-HKD interest rate differentials, capital flow dynamics, and shifts in market sentiments. USD-HKD interest rate differentials played an important role across all episodes. Wider positive USD-HKD spreads tended to create episodes of the triggering of weak-side CU and vice versa. Equity-related inflows also played an important role, particularly in episodes B, C, D and E. Strong equity market inflows tended to be associated with episodes of triggering of strong-side CU, while weak inflows created episodes of triggering of weak-side CU. Whenever the HKD exchange rate strengthens (weakens) to the strong-side (weak-side) CU, the HKMA stands ready to sell (buy) Hong Kong dollar against US dollar upon requests by banks; for instance in episodes A, B and E, the CU was triggered[6] to maintain the HKD within the convertibility bands.

3. Within the LERS, movements of the HKD towards the weak-side or strong-side CUs are driven mainly by shifts in interest rate differentials and capital flows. When Fed tightening widens the positive USD-HKD interest-rate differential, measured by LIBOR/SOFR

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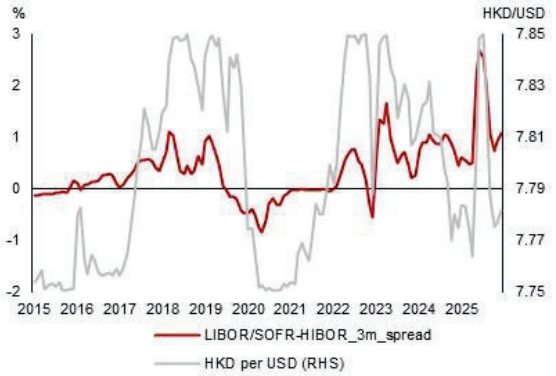
[6] The weak-side CU was triggered 13 times between 12 and 18 April 2018 and six times between 15 and 18 May 2018 during episode A while the strong-side CU was triggered six times between 21 April and 27 April 2020 during episode B and four times in early May during episode E.

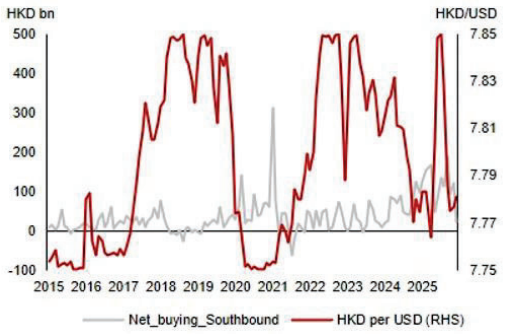
minus HIBOR as applicable, arbitrage and capital outflows typically push HKD exchange rate towards the weak-side CU (Figure A1.2). Conversely, when equity inflows surge or carry trade turns favorable in HKD, the HKD exchange rate tends to move towards the strong-side CU (Figure A1.3, Figure A1.4). Whenever the weak-side or strong-side of the CU is triggered, the Aggregate Balance contracts or expands accordingly, leading to changes in the HIBOR. When the weak-side CU is triggered, the HKMA purchases HKD, which contracts the Aggregate Balance and lifts HIBOR, tightening liquidity conditions. However, when the strong-side CU is triggered, the HKMA sells HKD, which expands the Aggregate Balance and lowers HIBOR (Figure A1.5), easing liquidity conditions and guiding the exchange rate back within the convertibility zone.

Figure A1.2. LIBOR/SOFR-HIBOR Spread and HKD Exchange Rate



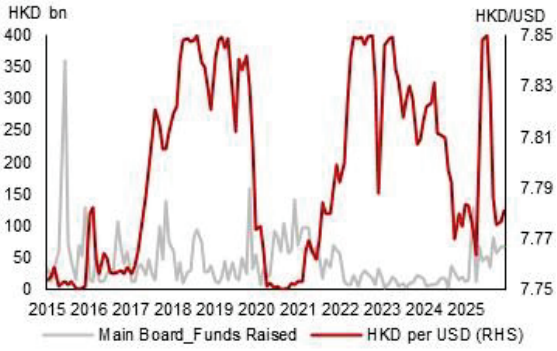
Source: Hong Kong Association of Banks; CEIC; Haver Analytics
Note: LIBOR data available until June 2023 as it was discontinued in the summer of 2023, SOFR was used after June 2023.

Figure A1.3. Southbound Inflows and HKD Exchange Rate



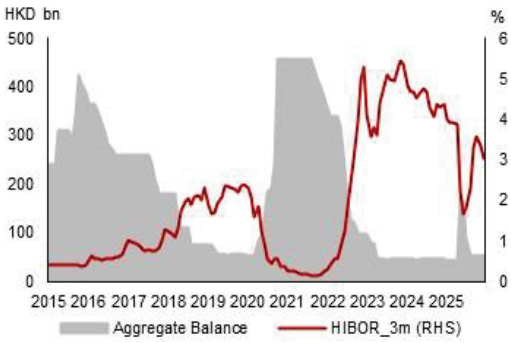
Source: HK Exchange; Hong Kong Association of Banks; Haver Analytics

Figure A1.4. Main Board Equity Funds Raised and HKD Exchange Rate



Source: Hong Kong Association of Banks; HK Exchange; CEIC

Figure A1.5. Aggregate Balance and HIBOR

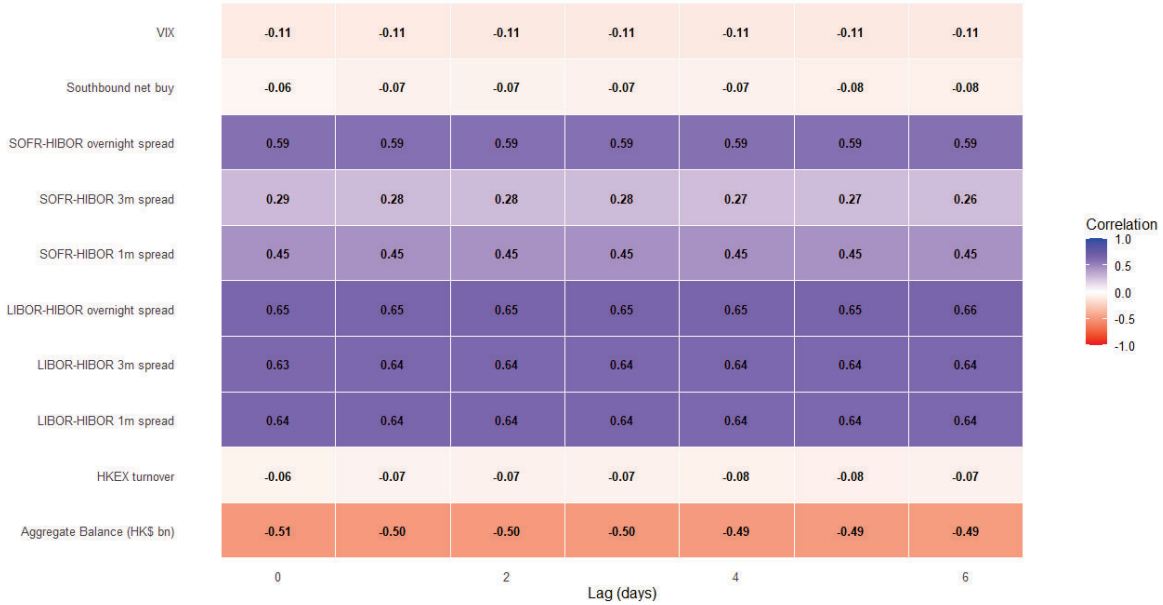


Source: HKMA; Hong Kong Association of Banks; CEIC; Haver Analytics

Empirical Analysis of Recent HKD Exchange Rate Movements

4. Correlation analysis suggests that HKD movements are most closely associated with short-term USD-HKD interest rate differentials (**Table A1.2**), particularly the LIBOR-HIBOR spreads. This finding supports the view that interest-rate arbitrage is a key transmission channel through which exchange rate pressures are transmitted under the LERS. By comparison, equity market variables and risk sentiment show weaker correlations with the HKD exchange rate, indicating that they are likely secondary influences rather than the principal drivers of HKD fluctuations.

Table A1.2. Correlation Analysis of HKD Exchange Rate with Other Variables



Source: HKMA; HK Exchange; Hong Kong Association of Banks; CEIC; Haver Analytics; AMRO staff calculation
Note: The coefficients displayed here are the correlation coefficients between HKD per USD and other variables. CBOE's VIX is used as a proxy for risk-off sentiment. HKEX turnover refers to the Hong Kong Exchange turnover, a measure of stock market activity in Hong Kong .

5. Regression results further suggest that the HKD movements are mainly driven by relative short-term USD-HKD interest rate differentials. AMRO's staff estimates using the OLS model (Table A1.3) provide insights into some key drivers of the recent movements in Hong Kong's exchange rate. The HKD spot exchange rate is used as the dependent variable, while the independent variables comprise LIBOR/SOFR-HIBOR spread, Southbound Connect net buying, Hong Kong Exchange turnover value, and CBOE's volatility index (VIX). These variables were selected as they represent key macro-financial factors identified in the literature and by the HKMA as influencing HKD exchange rate dynamics. The regression results point to short-term USD-HKD interest rate differentials as a key observable factor associated with HKD movements, rather than as the sole determinant of exchange rate fluctuations. In both the LIBOR-based and SOFR-based specifications, higher short-term USD rates relative to HKD rates are associated with a weaker HKD, consistent with the interest rate arbitrage mechanism under the LERS. Southbound net buying enters with a negative coefficient in USD-HKD and SOFR-based specifications and is statistically significant in Eq.1 and Eq.2, indicating that stronger Chinese Mainland purchases of Hong Kong equities tend to support the HKD. However, the magnitude and significance of this effect are less consistent than those of the interest rate differential. HKEX turnover is negative throughout and is strongly significant in the SOFR-based model, suggesting that stronger market-wide equity activity may coincide with HKD strength. By contrast, the role of VIX is less stable across specifications, implying that the influence of global risk sentiment is more episodic and sensitive to sample periods.

Table A1.3. OLS Model Results for Major Drivers of HKD Movements

	Explanatory Var.							
Dependent Var.	USD_HKD_t	$(LIBOR - HIBOR)_t$	$(SOFR - HIBOR)_t$	SB_NB_t	$HKEX\_turnover_t$	VIX_t	C	Adj R^2
HKD_t (Eq. 1)	0.032***	—	—	-0.000**	-0.000***	-0.000	7.794***	0.375
HKD_t (Eq. 2)	—	0.047***	—	-0.001*	-0.000	0.001***	7.775***	0.444
HKD_t (Eq. 3)	—	—	0.018***	0.000	-0.000***	-0.002***	7.833***	0.576

Source: AMRO staff estimations
Note: 1) ***, ** and * denote that null hypothesis is rejected at the 1 percent, 5 percent, and 10 percent significant level, respectively. 2) HKD, USD_HKD, (LIBOR-HIBOR), (SOFR-HIBOR), SB_NB, HKEX_turnover, VIX represent HKD per USD spot exchange rate, USD-HKD interest rate differentials, LIBOR-HIBOR spread, SOFR-HIBOR spread, Southbound net buying, HKEX turnover value and CBOE's Volatility Index respectively. 3) Daily data is used in the regression analysis. Given the daily frequency of the data and the likelihood of autocorrelation and time-varying volatility, Newey-West standard errors are used as a robustness measure. 4) 1-month interest rate differentials are used in all equations. 5) For Eq.1. LIBOR data is used until 30 June 2023 and SOFR data is used after 30 June 2023. For Eq.2, the sample period is from January 2015 to June 2023. SOFR data was used after June 2023 in Eq.3. 6) The sample period is from 2015 to 2025.

Policy Implications

6. The empirical result that the Hong Kong dollar exchange rate is largely driven by USD-HKD interest rate differentials shows that the LERS has been functioning normally. While there were periods in recent years when exchange rate volatility increased notably—attracting market attention—the Hong Kong dollar has remained within the convertibility zone, consistent with the system's design. This provides strong evidence that the exchange rate regime has been operating in a broadly stable and effective manner. The stability of the exchange rate regime has remained an important anchor for financial markets and has helped preserve confidence in Hong Kong's role as an international financial center amid a challenging external environment, including heightened US-China tensions.

7. Sizable divergences between Hong Kong and USD rates can persist without undermining the effective functioning of the LERS. Under the LERS, the trigger for currency board operation is not the size of the interest rate differential itself, but whether the Hong Kong dollar reaches either side of the CU. As long as the exchange rate remains within the convertibility zone, HKMA is not required to adjust the Aggregate Balance, even if the HIBOR remains significantly below comparable USD rates. In such circumstances, abundant HKD liquidity, and offsetting capital flows such as equity-related inflows, can slow the arbitrage process and allow rate differentials to persist. When the HKD reaches the weak-side CU and banks request conversion, the resulting CU transactions involve the HKMA purchasing HKD, thereby contracting the Aggregate Balance and placing upward pressure on HIBOR.

8. Looking ahead, continued monitoring of the interaction between capital flows, Hong Kong dollar liquidity conditions, and USD-HKD interest rate differentials will remain important in assessing the functioning of the LERS. As economic integration with the Chinese Mainland deepens and capital flows between Hong Kong and the Chinese Mainland via various Connect scheme channels increase, the city's financial conditions may align more closely with those of the Chinese Mainland. Against this backdrop, the exchange rate dynamics of the Hong Kong dollar and its relationship with Hong Kong's broader financial conditions and business cycles may warrant further analysis and discussion. A better understanding of these interactions would help assess how the LERS continues to operate in an environment where Hong Kong remains anchored to the US dollar while becoming increasingly integrated with the Chinese Mainland's financial cycle.

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