Asia FI & FX Strategy Viewpoint

A primer on HKD funding

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GEM FI & FX Strategy
Asia

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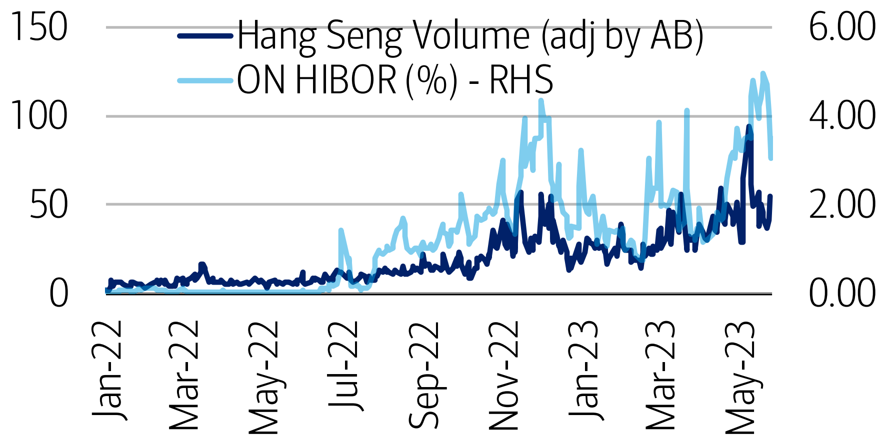
HIBOR will stay highly volatile until the Fed cuts

The overnight HIBOR fixing reached a recent peak of close to 5% and fell rapidly to 3% over a span of three trading days. With aggregate balance at HK$45bn, a post-2008 low, we think the theme for Hong Kong Dollar (HKD) funding for the rest of 2023 will be volatility and range-trading. In this primer, we dig into the mechanics behind the HKD funding market and show the key variables to monitor to determine whether HKD liquidity conditions can be considered 'loose' or 'tight'. Moreover, we look at the various tools the HKMA has to bridge liquidity pressure temporarily and the structural actions that they may take to increase aggregate balance. However, for the HKMA, we see the threshold to unroll EFB and increase aggregate balance to be quite high. The primary goal of the HKMA is to protect the USDHKD peg. Thus, by increasing the aggregate balance this encourages the carry trade and will result in a reduction in FX reserves.

We like to pay HIBOR upon dips

Until the Fed cuts, we think overnight HIBOR can roughly fluctuate between 3% to a likely upper limit of 6%. With this presumption, we like paying front-end HKD forward points whenever 1-month points approach close to -100 pips, and receiving at -30 pips. Spot USDHKD will fluctuate between 7.82-7.85. Similarly, on the front-end HKD IRS, we like paying pay 1-year if the level falls close to 4.25%, especially as the market incrementally prices the probability of additional Fed hikes for 2023. Risks to this view include if the Fed drastically cut rates in the next 6-months, the HKMA unwinds EFB or there is significant capital outflow, resulting in overnight HIBOR to push above 6%.

Exhibit 1: The demand-and-supply of HKD funding
The overnight HIBOR fixing tends to increase when equity volumes (adjusted by AB) increase



Source: Bloomberg

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Glossary
CU - Convertibility undertaking
EFB - Exchange Fund Bills
HIBOR - Hong Kong Interbank Offered Rate
HKD – Hong Kong Dollar
HKMA - Hong Kong Monetary Authorities

For a list of all our recommended trades, please see: Global Emerging Markets Weekly: Comparability of treatment: why it matters for EM bondholders 18 May 2023

Timestamp: 28 May 2023 06:00PM EDT

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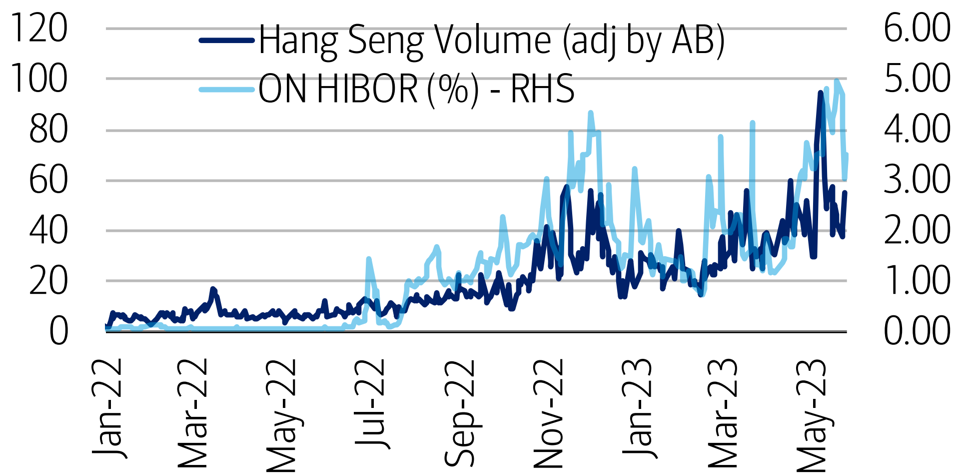
The supply-and-demand dynamics of HKD funding

The key determinants to HKD funding. Throughout our publications on the HKD, we have noted that the cost of overnight funding in the HKD market must be understood as a ratio of demand-and-supply dynamics. The overnight HIBOR fixing is the intersection of demand-and-supply forces and represents the cost to borrow aggregate balance overnight to settle an immediate HK$ payment at the HKMA's clearing house. As **Exhibit 2** shows, the ratio of volumes traded among the Hang Seng constituents versus aggregate balance is a decent proxy for the demand-versus-supply dynamics in the HKD funding market.

Exhibit 2: The demand-and-supply of HKD funding
The overnight HIBOR fixing tends to increase when equity volumes (adjusted by AB) increase



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Demand: The clearing of equity trading is the largest use of aggregate balance.
The numerator of our ratio is the trading volume of equities on Hong Kong's benchmark equity index – the Hang Seng Index. Hong Kong's payment system predominantly serves to clear payment tied to the trading of Hong Kong-listed equities. This reflects the outsized role of the equity market relative to Hong Kong's real economy. Typically, there is a two-day lag between increased trading volumes and a reaction in the funding market as payment for equity trades are settled on a t+2 basis.

Supply: The aggregate balance is the pool of excess liquidity in Hong Kong.
The denominator of our ratio is the size of the aggregate balance. Aggerate balance is the clearing unit used to settle interbank payment at HKMA's clearing house. In essence, aggregate balance is cash that can be used between Hong Kong banks for the purpose of payment. When HKD liquidity is flushed (i.e. when the aggregate balance is large), even a material increase in demand for HK$ settlement will not have an impact on the overnight cost of funding because Hong Kong banks are flushed with clearing units and there is little concern that banks will not be able to successfully clear the payments. During times of flushed liquidity, Hong Kong banks will trade away their aggregate balance to hold exchange fund bills (EFB) as EFB pay a coupon, while aggregate balance is a non-interest paying asset.

The distribution of liquidity in HKD system

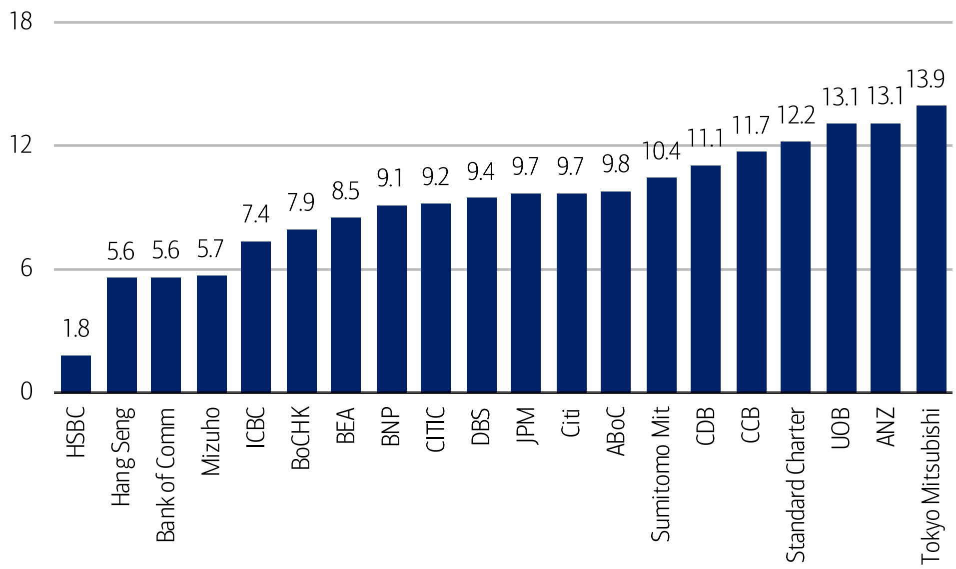
Aggregate balance is not evenly distributed in the Hong Kong banking system. However, when the aggregate balance is reduced during the Fed's hiking cycle, then it is less certain if a Hong Kong bank can secure the necessary aggregate balance to settle an overnight payment. While aggregate balance, by construction, represents excess HKD liquidity in the Hong Kong banking system, this excess is not evenly distributed. Banks that have a larger franchise with a big deposit base will on average draw in more inflows at the end of the day. This leaves a small number of banks in a surplus position, while most banks in the system are in a deficit.

The role of HSBC in the HKD funding market

HSBC typically has the lowest funding cost in HKD. We can get a glimpse of this inequality by monitoring the distribution of overnight HIBOR fixing among the 20 panel banks that contribute HIBOR fixings. **Exhibit 3** shows the rank of the average overnight HIBOR fixing in the month of May 2023. We chose to use May 2023 because this is a period when the aggregate balance fell to HK$44.8bn, a level that is the lowest since 2008 and can arguably be considered a 'tight' level for HKD funding. When the system is tight, this is when friction in the payment system is most clear. Throughout May 2023, we can see that HSBC almost consistently has the lowest overnight HIBOR fixing, suggesting that at the end-of-day, typically, most of the inflows of aggregate balance goes towards HSBC. If HSBC is flush with aggregate balance on most days, then its own cost of overnight funding should be lower relative to peers that are in a deficit and those deficit banks would need to bid for aggregate balance overnight to settle their payment.

Exhibit 3: Average rank of lowest overnight HIBOR fixings in May 2023

On average, HSBC almost consistently always has the lowest overnight HIBOR fixing



Source: Bloomberg

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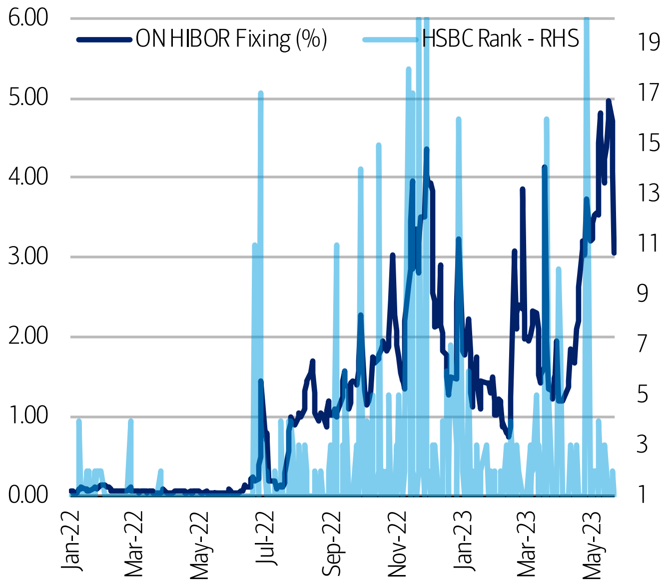
A rise in HSBC's funding (relative to other HIBOR panel banks) is often a meaningful signal. HSBC is not always the bank that posts the lowest overnight HIBOR fixing. In the last two years, we have often found that when the rank of HSBC's overnight HIBOR fixing increases relative to the other HIBOR panel banks, this tends to signal a near-term peak in the overnight HIBOR fixing (**Exhibit 4**). However, we note that this relation was evidently missing during the latter half of February 2023 when HIBOR rose higher, but we did not see a noticeable increase in the rank of HSBC's overnight HIBOR fixing.

Is aggregate balance at HK$44bn considered 'tight'? Throughout this note, we emphasize that the concept of 'tight' funding conditions in the HKD funding market must consider both supply and demand factors. Even at HK$44bn, this level of aggregate balance can still be considered loose on days when demand for the HK$ settlement is low. For example, on Wednesday, 24 May, 2023, the overnight HIBOR fixing dropped 103bps, down from a recent high of 4.96% reached on Friday, 19 May, 2023. The sudden relaxation in HKD funding likely partially contributed to equity trading volumes remaining low, in addition to IPO volumes remaining weak (**Exhibit 5**). As such, when equity transaction volumes are low, there are not much HK$ payments to clear. This results in less use of aggregate balance and lower cost of funding overnight.

Exhibit 4: ON HIBOR fixing versus the HSBC rank
Often, we have found that when HSBC's rank among the HIBOR panel banks increases, this tends to signal a near-term peak in HKD funding



Source: Bloomberg

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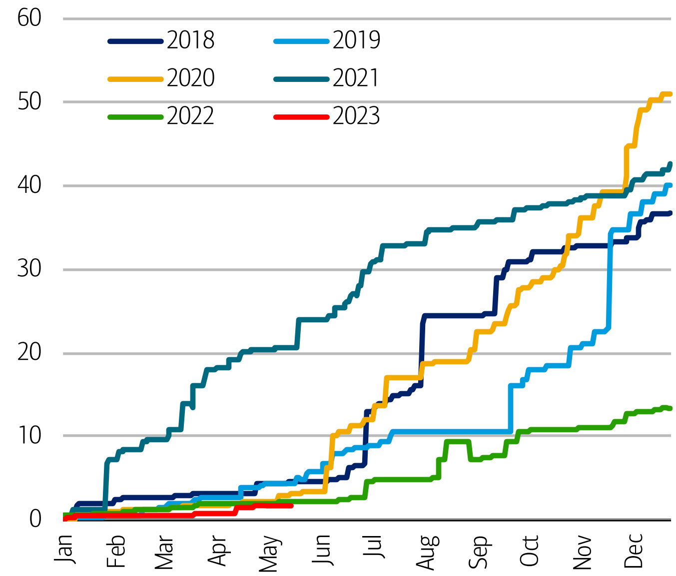
Exhibit 5: IPO volumes in Hong Kong (US$ Bn)
IPO volumes in Hong Kong in 2023 have remained very weak



Source: Bloomberg

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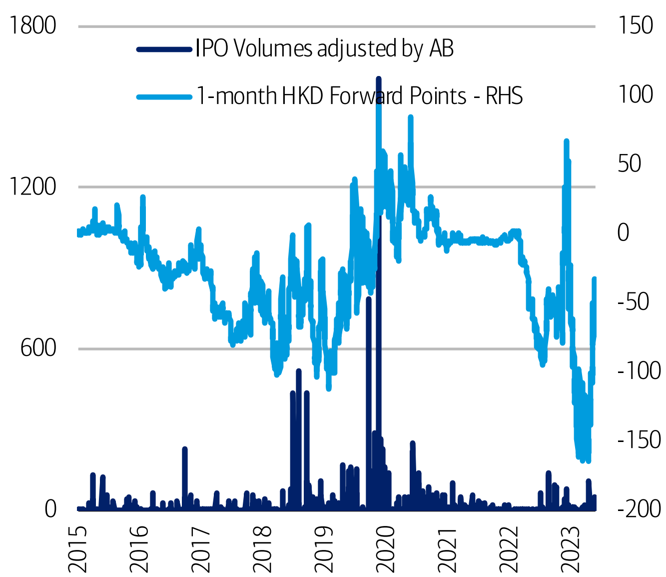
How do IPOs impact HKD funding conditions?

IPOs matter to HKD funding, especially when the aggregate balance is reduced. Another topic that has historically been relevant for HKD funding has been the IPO schedule. In the past, when aggregate balance was low and there was an anticipation of a large IPO arriving, the HKD market tended to get excited and start pricing in funding tightness at around the time of the expected IPO. The impact was most evident during the Alibaba's November 2019 IPO when the market aggressively bid up 1-month forward points from -33 pips to +92 pips in anticipation of the funding squeeze (**Exhibit 6**).

Why do IPOs in Hong Kong impact HKD funding conditions? Exhibit 7 shows the listing process for private companies to become publicly traded on the Hong Kong Exchange. The period that is most relevant to HKD funding is the 7-days during the pricing and allotment period. During this period all the necessary money that is involved with the IPO are sent to the receiving bank and this liquidity is often not efficiently recirculated back to the interbank market. The funding stress is particularly acute when the aggregate balance is relatively small and the expected IPO size is large and is many times oversubscribed.

The Alibaba IPO in 2019 is the clearest example of large IPO and its impact on HKD funding. In November 2019, Alibaba raised HK$ 94bn and was one of the hottest and largest IPO in Hong Kong's history. The IPO was 40x times oversubscribed and the clearing for this payment had to be all conducted at time when the aggregate balance was drained down to HK$54bn. On the day of the IPO's debut on 26 November, volumes on the HKEX also rose and the combined funding pressure resulted in the HKMA's discount window to be triggered and the HKMA injected HK$686mn to ease payment pressure during that period (see The role of HKMA as lender-of-last-resort for additional an in-depth discussion on the use of the HKMA's discount window).

Exhibit 6: IPO volumes and movement in front-end HKD forward points
In 2018 and 2019, IPO volumes impact the funding conditions in HKD



Source: Bloomberg

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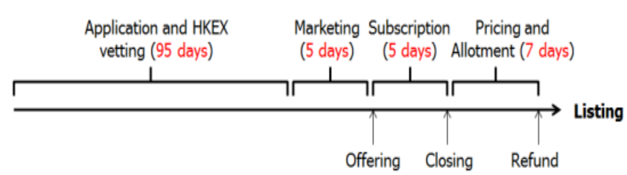
Exhibit 7: Process for listing on Hong Kong Stock Exchange
During the pricing and allotment period, an excess amount of HKD cash is locked up and unavailable to be recycled back into the interbank system



Source: HKMA staff estimates, based on listing documents in HKEX's website

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Starting 2H23, IPOs will have a reduced impact on HKD funding conditions.
Since July 2021, the HKEX began consulting and planning for the implementation of the FINI (Fast Interface for New Issuance). This project modernizes the IPO process in Hong Kong and the most important implication for fixed-income investors is narrowing the window between closing and refunding date from seven days to three days. This reduces the period in which HKD liquidity is locked up, and, all else equal, allows aggregate balance to flow more easily between Hong Kong banks. According to the marketing material provided by the HKEX, for mega IPOs, the HKEX claims this reform will reduce the amount cash lock-up by 70-80%. When the FINI system is launched, all else equal, IPOs will have a reduced impact on HIBOR and HKD forward points for every level of aggregate balance in the system.

Signs of funding stress and tools at the HKMA's disposal

What are the most obvious signs of funding tightness in HKD? In addition to a sharp rise in the overnight HIBOR fixing, other signs of funding tightness in Hong Kong include:

1. Increasing payment failure between Hong Kong banks resulting in the triggering of the HKMA discount window;
2. The narrowing of spread between overnight HIBOR and the HKMA Base Rate; and
3. The narrowing of spread between the overnight HIBOR and the 3-month EFB yield.

The role of HKMA as lender-of-last resort

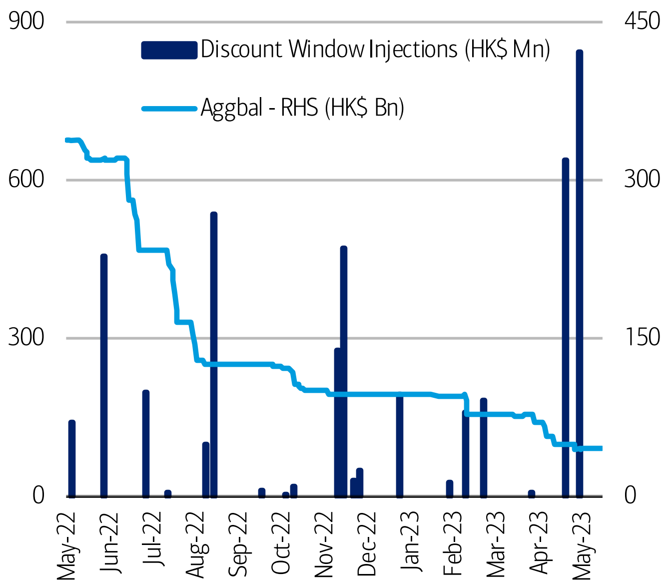
The HKMA can step in with the discount window as a lender-of-last resort if payment between Hong Kong banks fail. When a Hong Kong bank is unable to settle a payment, this would automatically result in an overdraft with the HKMA, which triggers the use of the discount window. The HKMA will take eligible collateral from the deficit bank (usually in the form of EFB) and this will increase the size of the aggregate balance for as long as the overdraft remains unpaid. The use of discount window is charged at the HKMA base rate on a daily basis. The base rate is the higher of Fed Lower + 50bps or the 5-day moving average of overnight and 1-month HIBOR fixing. Since HIBOR is normally lower than US SOFR, the HKMA base rate is typically Fed Lower + 50bps, which is currently at 5.50%.

The use of the HKMA's discount window is rising since April 2023. Exhibit 9 shows the days when the HKMA increased aggregate balance via the discount window since the first weak-side CU event for this cycle, starting May 2022. For this analysis, we only include the injections which were larger than HK$100mn to see more clearly the relationship between the use of discount window, aggregate balance and the spread between the overnight HIBOR and the Base Rate. We can see, in nominal terms, that the use of discount window is approaching levels similar to late-2019.

Rising use of the discount window shows increasing payment failure among Hong Kong banks. However, there is a distinctive difference between the uses (then versus now). In late-2019, due to the year-end funding squeeze, market rates (i.e. overnight HIBOR) were higher than the HKMA base rate, which provided the Hong Kong banks an incentive to trigger the discount window versus borrowing overnight from other banks. However, in April and May 2023, overnight HIBOR fixings remained far below the Base Rate but still resulted in a relatively large tapping of the discount window. This may be a sign of friction in the interbank clearing system as Hong Kong banks are unable to settle payments before day's end resulting in the triggering of the discount window. Moreover, relative to 2019, the absolute level of aggregate balance is now smaller (HK$45bn now versus HK$54bn in 2019) and the nominal value of payments is also larger given monetary inflation after the COVID period.

The Hong Kong banking system will increasingly rely on the HKMA funding to bridge payments. These combined observations suggest that the Hong Kong banking system will increasingly be dependent on the HKMA's discount window to bridge payment as funding conditions remains tight and deficit banks scramble for funding. The scramble for funding will be particularly acute during quarter ends when overnight funding cost is seasonally increased.

Exhibit 8: Use of HKMA discount window and the aggregate balance
Use of the HKMA discount window is increasing starting April 2023 when the aggregate dropped below HK$50bn



Source: Bloomberg

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Exhibit 9: Recent use of the HKMA discount window (versus peak in 2019)
The size of the discount window's injection is reapproaching levels seen in late-2019

Date	Discount Window Injection (HK$ M	Aggbal (HK$ Mn)	ON HIBOR (%)	HKMA Base Rate	Spread (HIBOR vs HKMA Base Rate)
5/8/2023	844	45,371	3.56	5.50	-1.94
4/27/2023	640	49,719	3.03	5.25	-2.22
2/27/2023	183	77,258	2.36	5.00	-2.64
2/14/2023	160	96,078	0.77	5.00	-4.23
12/29/2022	194	96,445	2.43	4.75	-2.32
11/18/2022	472	96,707	2.85	4.25	-1.40
11/16/2022	193	96,428	3.45	4.25	-0.80
11/14/2022	276	96,374	2.65	4.25	-1.60
8/17/2022	535	125,497	1.56	2.75	-1.19
8/11/2022	100	124,840	1.41	2.75	-1.34
6/28/2022	198	233,506	0.38	2.00	-1.62
5/30/2022	456	320,428	0.05	1.25	-1.20
12/31/2019	13400	67688	4.56	2.49	2.072
12/30/2019	651	54939	2.74	2.43	0.314
12/27/2019	151	54439	2.82	2.35	0.473
12/24/2019	956	55247	2.90	2.24	0.664

Source: Bloomberg

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Composition of the Hong Kong monetary base: aggregate balance versus EFB

Funding conditions are increasingly suggesting that Hong Kong banks will hold aggregate balance instead of EFB. Another metric to judge the "tightness" of the HKD funding market is the relative spread between overnight HIBOR and the yield of 3-month EFB. For Hong Kong banks, these assets are interchangeable and represent the yield these banks can earn by lending overnight to deficit banks or the yield they can earn by holding EFB (the most common tenor is the 3-month bill). May 2023 saw overnight rates in Hong Kong rise from 3.20% to close to 5%. The inversion of the HIBOR curve resulted in the overnight HIBOR being higher than the 3-month EFB yield for 13 consecutive trading days (**Exhibit 11**). For us, this is a clear sign that aggregate balance is relatively low, and should be a signal for HKMA to release liquidity through net reduction of EFB issuance.

EFB also help Hong Kong banks meet Basel requirements. However, one argument to suggest Hong Kong banks will continue to hold on to EFB even at a very tight level of aggregate balance is that EFB serves to help Hong Kong banks meet regulatory requirements under the Basel standards. Historically, the Hong Kong government has run large fiscal surpluses and had little need to issue debt to fund fiscal spending. 2022 was a year of record deficit spending but the Hong Kong government funded this deficit by spending down its accumulated surplus (parked at the HKMA as fiscal placement), thus high-quality sovereign assets issued by local authorities remained in short supply. The only comparable asset that Hong Kong banks can hold would be EFB as they are liabilities of the HKMA, and thus, a debt of the Hong Kong government. In conclusion, because of the sovereign characteristics of EFB, Hong Kong banks may have an incentive to continue to hold on to EFB outside pure economic motives.

Exhibit 10: Overnight HIBOR versus the HKMA Base Rate (%)
The gap between overnight HIBOR and the HKMA base rate recently narrowed

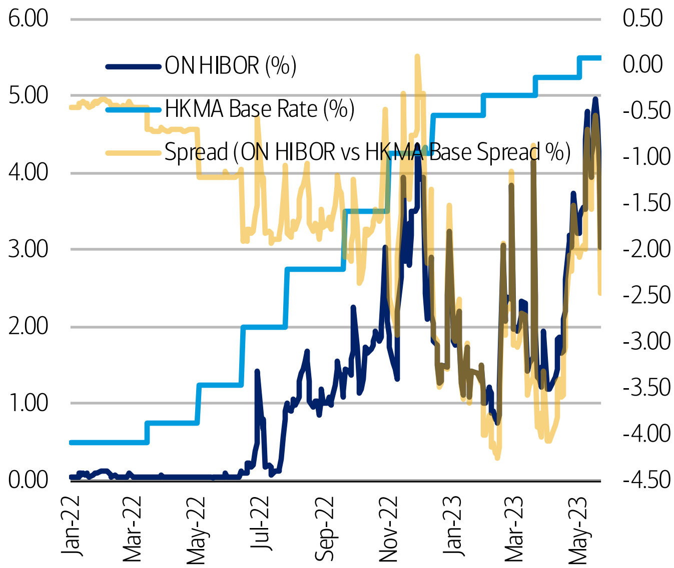

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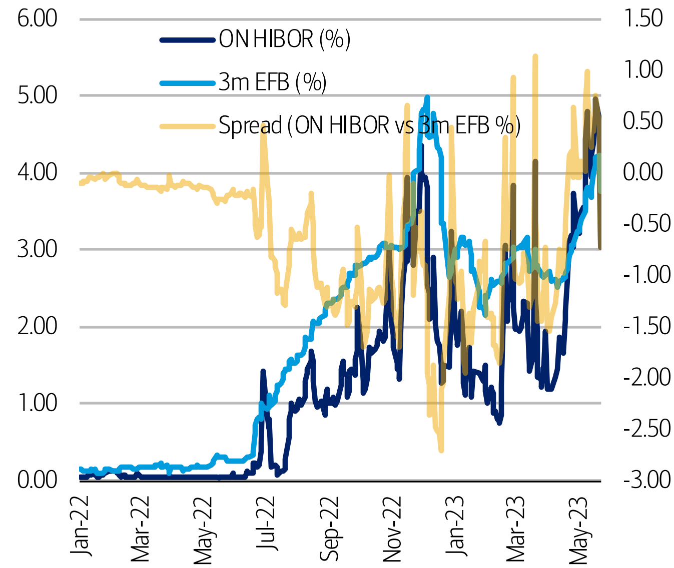
Exhibit 11: Overnight HIBOR versus 3-month EFB (%)
In May 2023, overnight HIBOR exceeded the 3-month EFB yield for 13 consecutive trading days



Source: Bloomberg
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The threshold for the HKMA to increase aggregate balance remains high. In Asia FI & FX Strategy Watch: Hong Kong's aggregate balance: breaking through the 2019 low 20 April 2023, we noted the four primary goals of the HKMA:

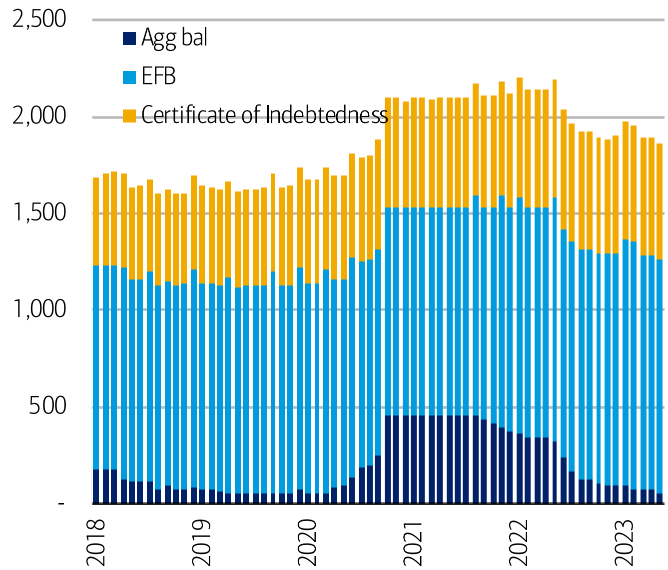
- Maintaining currency stability within the framework of the Linked Exchange Rate System;
- Promoting stability and integrity of the financial system, including the banking system;
- Helping to maintain Hong Kong's status as an international financial centre, including the maintenance and development of Hong Kong's financial infrastructure; and;
- Managing the Exchange Fund.

In that note we argued that because of the conflicting mandates Goal 1 versus Goal 2 and 3, the primacy of maintaining the HKD peg will reign supreme. Especially when interest rates are not yet at an exorbitant level, the HKMA has little incentive to relax funding conditions as this would increase aggregate balance and increase the volatility-adjusted return of buying of US$ and once again encourage the market to engage in the carry trade (**Exhibit 13**).

The HKMA would not want the market to price in 'cuts'. A secondary issue with unwinding the EFB is that once this occurs, the market will have to price implicit 'HKMA cuts' going forward and will relax funding across the entire FX forward curve. As the Fed opts for a 'higher-for-longer' stance, it is unclear how many additional times the HKMA will need to unwind EFB issuance to maintain a satisfactory level of HIBOR. In a press release issued in early May 2023, the HKMA Chief Eddie Yue noted, "Under the LERS, our policy objective is 'maintenance of the stability of the Hong Kong dollar exchange rate', rather than targeting Hong Kong dollar interest rates." As such, the easiest way to avoid such a perception of intervening interest rates is to maintain EFB at its current levels.

In summary, the HKMA can choose between lower levels of FX reserves or higher and more volatile local interest rates. Due to the primacy of the currency stability mandate, we think it is more likely that HIBOR will remain higher (and more volatile) for longer compared to the HKMA accepting a reduced balance sheet (and higher risk to maintaining the HKD peg).

Exhibit 12: Hong Kong monetary base (HK$ Bn)
Hong Kong's monetary base remains massive at HK$1.86tn



Source: Bloomberg

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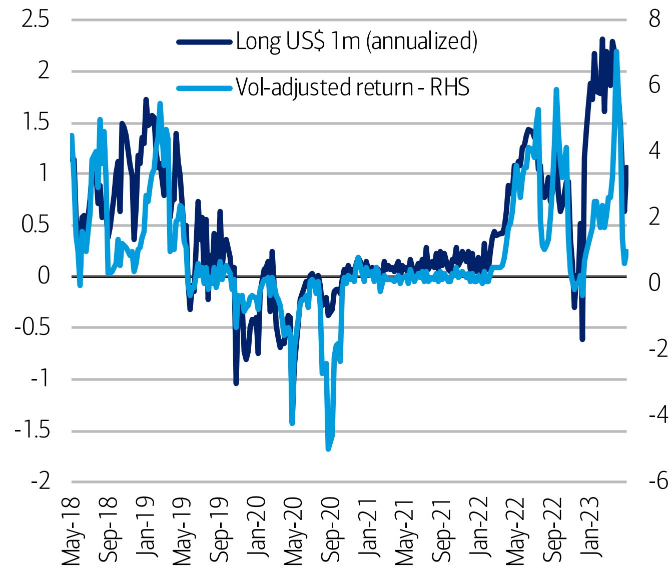
Exhibit 13: Vol-adjusted return of long US$ positions
Releasing aggregate balance will increase the return on long US$ positions



Source: Bloomberg

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HIBOR outlook and recommended positioning

Pay HKD forward points on dips, especially as 1-month FX points approach -100 pips. With the aggregate balance reduced and the market increasingly expecting the Fed cycle not being over, we like paying front-end HKD forward points and 1-year IRS upon dips. Our rough benchmark for funding loosening too much would be if 1-month HKD forward points reach -100 pips, and should be received if it rises to -30 pips. With the Fed remaining higher-for-longer, we think spot USDHKD, HKD forward points and front-end IRS would be range plays that reflect the front-end volatility of HIBOR.

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