December 2020

Whitepaper

Assessing the Impact of HKEX's ETF Liquidity Enhancements

Executive summary

As part of our ongoing mission to position Hong Kong as Asia's leading marketplace for Exchange Traded Funds (ETFs), Hong Kong Exchanges and Clearing Limited (HKEX) rolled out two major initiatives in June 2020 to enhance the trading liquidity of Hong Kong-listed ETFs. The first was the introduction of a new set of rules requiring market makers to provide continuous two-sided quotes at greater volumes and tighter spreads. The second was a new spread table that reduced the tick size – the smallest increment in which prices are quoted – by at least 50%, which in turn greatly increased the scope for bid-ask spreads to tighten.

In order to assess the impact of these measures, we examined the change in trading spreads and order books of 201 Hong Kong-listed ETFs immediately before and after our new market making obligations and spread table took effect on 1 June 2020. We found the vast majority of Hong Kong-listed ETFs experienced marked reductions in spreads, with the most significant improvements seen in liquid ETFs, Hong Kong equity ETFs, and low-priced US dollar counters.

The narrower spreads and enhanced liquidity should bolster trading of ETFs in Hong Kong and attract new issuers while helping investors diversify their portfolios and enriching their trading experience.

Introduction

ETFs are one of the fastest growing investment products in the world, broadening the investment options available to investors and enabling them to construct more diversified portfolios.

One of the biggest factors to consider in assessing the attractiveness of trading a given ETF is how liquid it is, which determines how much an investor can trade and at what cost. How much can be traded is gauged by assessing both the on-exchange order book (visible liquidity) as well as liquidity found over-the-counter (hidden liquidity).

The cost of liquidity expressed as the bid-ask spread which is set by market makers. The more efficiently market makers can fulfill orders of buyers and sellers the tighter the spreads.

Stock exchanges play a pivotal role in improving trading efficiency, including setting market quality standards and the minimum increments at which securities can be quoted. As part of our ongoing mission to position Hong Kong as Asia's ETF marketplace, HKEX rolled out two major initiatives in 2020 to substantially boost ETF liquidity:

- **New market making regime:** To create a more competitive environment in Hong Kong-listed ETFs, we introduced a set of market making obligations that will improve quality standards by requiring market makers to provide continuous two-sided quotes at greater depth and width throughout a trading day.

- **New ETF-specific spread table:** This new feature reduces the tick size – the smallest increment at which prices are allowed to be quoted – of Hong Kong-listed ETFs by at least 50%, allowing for better price discovery and increasing the scope for spreads to tighten.

Key outcomes

The introduction of our new initiatives, effective 1 June 2020, resulted in several notable changes in the median trading spreads of Hong Kong-listed ETFs:

- Order books show greater depth at tighter spreads; over 70% of all Hong Kong-listed ETFs have seen their spreads narrow by at least 10%.

- Spreads tightened across all liquidity tranches; among the most actively traded ETFs - with an average daily turnover (ADT) of above HK$100 million (US$13 million) – spreads narrowed 54% on average, while spreads of thinly-traded ETFs - with ADT of HK$1 million (US$130,000) - narrowed by an average of 27%.

- Among equities, leveraged & inverse (L&I) and commodity ETFs, median spreads narrowed in the range of 28% to over 70%.

- Spread differentials narrowed on ETFs trading in multiple currencies (HKD, USD and/or RMB).

Improving trading efficiency

Continuous quoting market making obligations

The new HKEX “continuous quoting” (CQ) market making regime replaces our previous “wide spread” (WS) regime whereby market makers of Hong Kong-listed ETFs were only required to provide quoted liquidity when an ETF entered a so-called “wide spread” state[1]. When an ETF entered such a state, its market makers were required to “normalise” the market by entering two-sided quotes at a prescribed size depth and spread width for a specified period.

Furthermore, the way in which quoted size and spreads used to be measured – number of board lots and number of tick intervals, respectively — under the WS regime caused significant variation in minimum standards among ETFs with similar liquidity profiles. On balance, the less stringent WS regime resulted in low levels of quoted liquidity by market makers in the form of low participation, small quoted size and wide trading spreads.

In order to improve the liquidity of ETFs, we replaced the WS regime with the CQ market making regime on 1 June 2020. Under our new system, all market makers are required to continuously provide two-sided quotes at a prescribed size depth (measured in dollar terms) and spread width (measured in percentage terms) for 80% of a trading day (see figure 1) . Each ETF’s market making obligations are determined according to its liquidity profile to ensure consistency among similar products.

The move to the CQ market making regime has raised market making standards, resulting in increased market maker participation and greater size and depth at narrower trading spreads.

Figure 1: CQ market making obligations

		Grouping		
		A	B	C
The maximum spread of two-sided market making orders entered by a market maker into the system (in percentage)		0.40%	1.00%	2.00%
The minimum quote size of market making orders that are within the maximum spread (per side)	HKD	$200,000	$200,000	$100,000
	RMB	$170,000	$170,000	$85,000
	USD	$25,000	$25,000	$12,500
The minimum participation rate of market marker per trading day (in percentage)		80%	80%	80%

1 A security is said to have entered a "wide spread" state when:
(i) the bid-ask spread is larger than a limit specified by HKEX from time to time;
(ii) a situation where there is only one-sided quotation; or
(iii) a situation where there is no existing quotation on both the bid and the ask queues.

New spread table for ETFs

Before the launch of our new spread table, the most actively traded ETFs listed in Hong Kong were tick-constrained. This meant they were already trading at the tightest spread possible and could potentially trade at a tighter spread if the tick sizes were reduced (see figure 2) .

Tick constraints were even more apparent when comparing the minimum achievable spreads of ETFs trading in multiple currencies (HKD, USD and/or RMB) on HKEX. We found the previous spread schedule could cause significant divergence between the HKD and USD trading counters of a given ETF, with spreads on the latter significantly inflated compared to the former (see figure 3).

Figure 2: Median spread (bps) vs median price of top 20 most active ETFs, 25 May to 29 May 2020 (before CQ and new spread table)

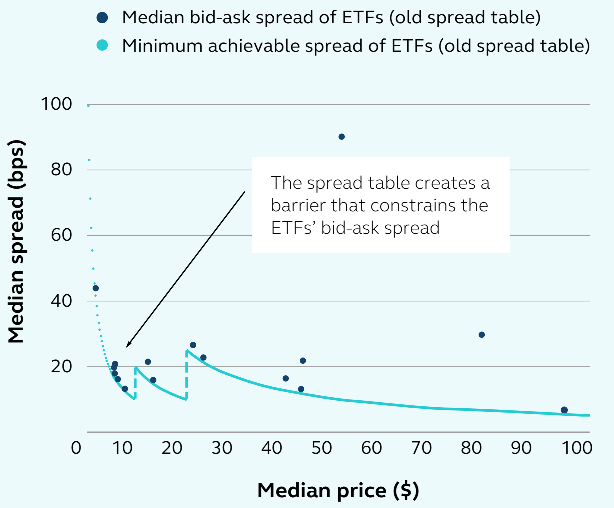
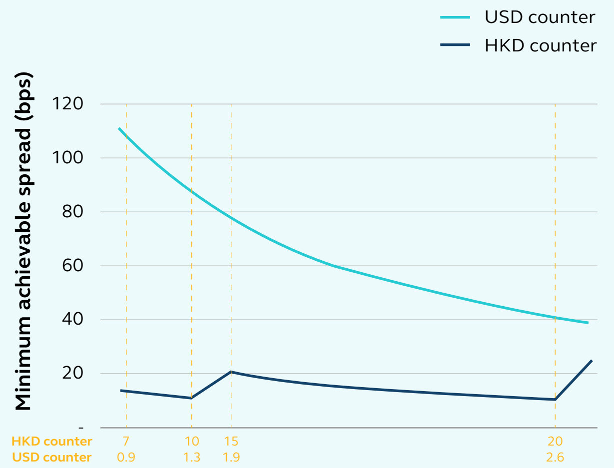
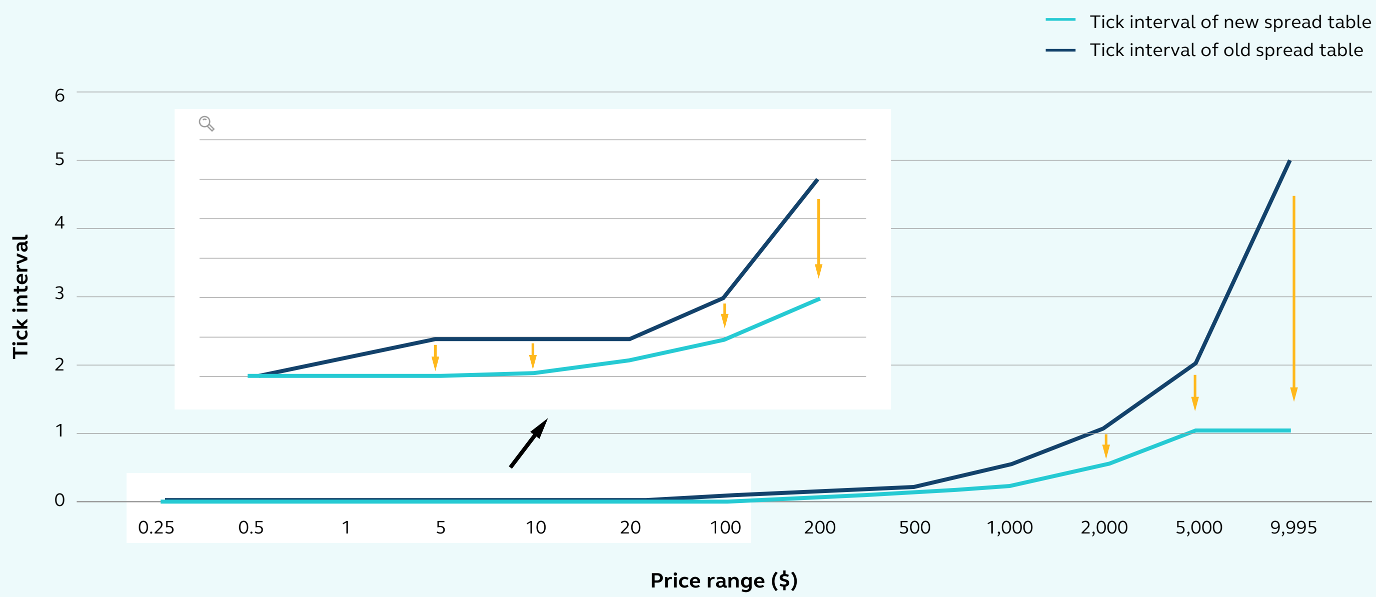


Figure 3: Trading spreads of ETFs tracking Hong Kong underlying



And because larger spreads result in higher trading costs for investors, resolving the issue of tick constraints and paving the way for tightening spreads was paramount for us to the introduction of a new spread table for ETFs, which served to reduce tick sizes across the board by 50% to 90% (see figure 4). This, in turn, reduced the minimum achievable spreads for investors when they trade Hong Kong-listed ETFs.

Figure 4: Reduction in tick interval



Assessing the impact

New measures boost liquidity

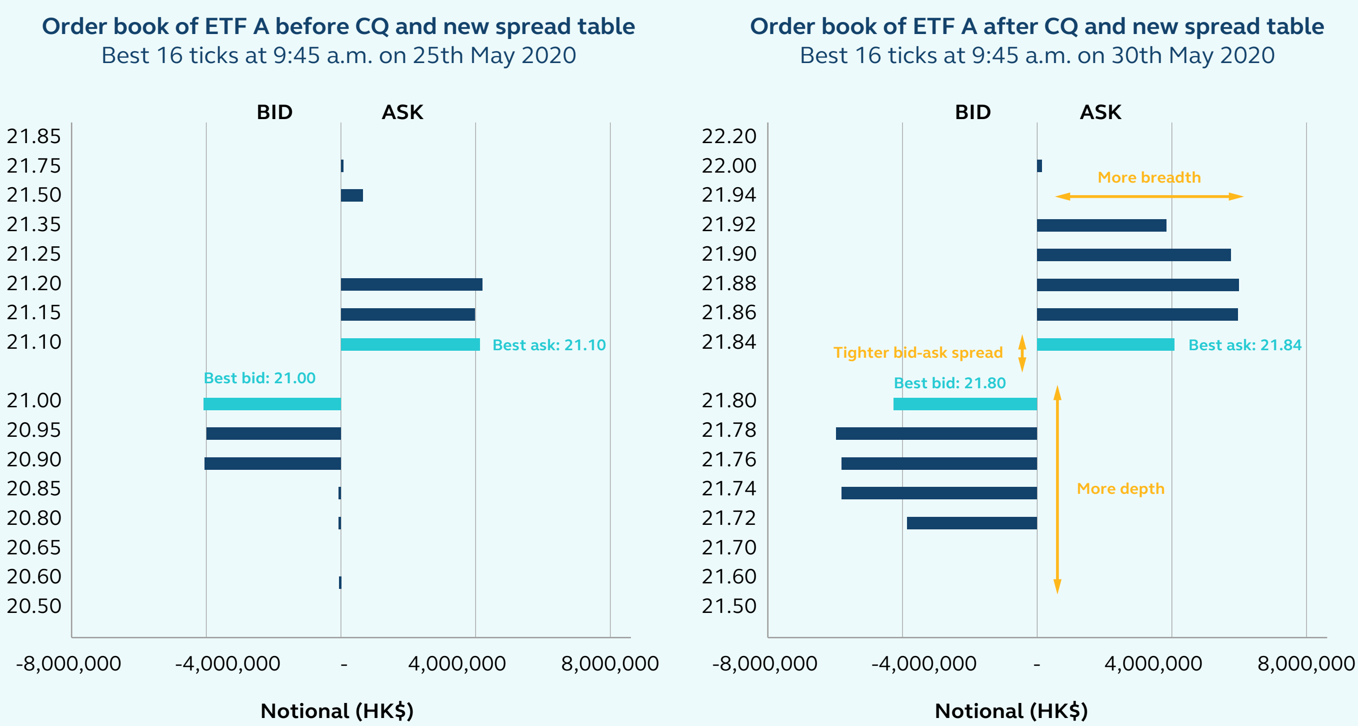
The introduction of our new ETF market making regime and spread table has had two major impacts. In the months following the changes, the order book has shown greater depth and breadth – meaning there are more price levels and greater quoted sizes at each level – at narrower spreads.

To illustrate the impact, we look at the order book of a sample thinly-traded ETF, ETF A (see figure 5). Before the launch of our new regime and spread table, ETF A's order book showed liquidity three levels deep with an aggregate notional value of around HK$13 million quoted on each side. At its tick size of $0.05, the best bid-ask spread was $0.10 with an average weighted spread for the three levels of $0.23.

Following the implementation of our new regime and spread table, the depth of the order book of ETF A increased to five levels with an aggregate HK$29 million on each side. At a reduced tick size of $0.02, the best bid-ask spread is $0.04 with an average weighted spread for the five levels of $0.12. Therefore, under our new regime and spread table, investors can execute trades on ETF A at 120% the size as before and at nearly 50% less cost.

This is just one of many examples of how our new initiatives have comprehensively boosted ETF liquidity for investors.

Figure 5: Impact of CQ and new spread table on order book of sample ETF

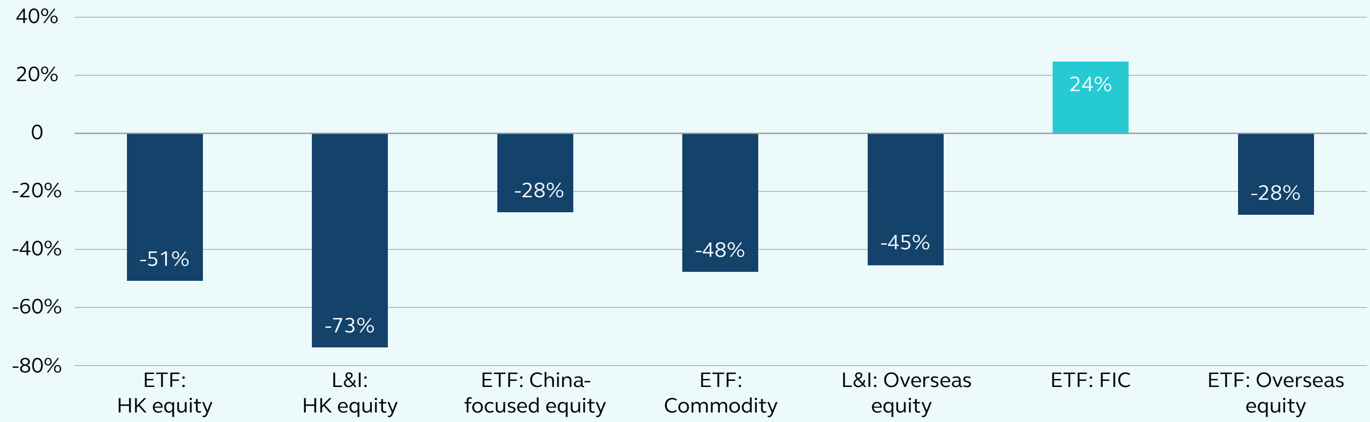


Impact on spreads

Overall, spreads have tightened for more than 80% of Hong Kong-listed ETFs[2] with over 70% of ETFs seeing spreads tighten by more than 10%. Further, an assessment of spread changes by market exposure (see figure 6) shows an across-the-board reduction in spreads, with the notable exception of fixed income ETFs.

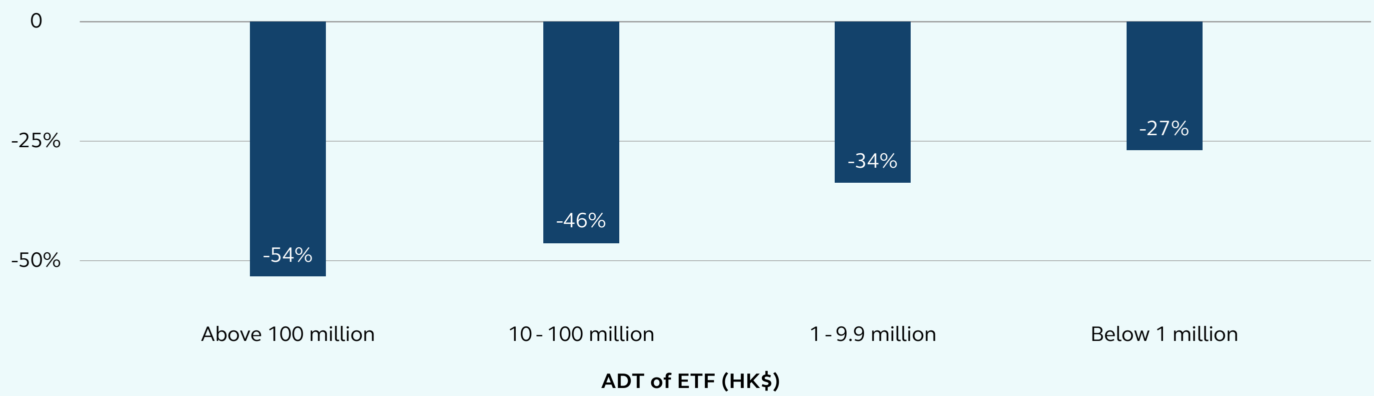
This is because the process of making the market more efficient has created more opportunities and freedom for price discovery. Given that most Hong Kong-listed fixed income ETFs are priced at a relatively high price range, the maximum spread requirement under the previous WS regime kept spreads artificially narrower than would be appropriate for their liquidity profiles. This artificial tightening made it inefficient for market makers to maintain fixed income ETF pricing. But, under the CQ regime, the trading spreads were able to widen to better reflect the liquidity profile of fixed income ETFs.

Figure 6: Changes in spreads by market exposure



Implementation of the CQ regime has also been accompanied by a narrowing of average spreads across all liquidity tranches, with the greatest reduction in spreads observed on the most liquid products (see figure 7). ETFs with an ADT of above HK$100 million have seen their spreads shrink by 54% on average. Even the more thinly-traded ETFs, with an ADT below HK$1 million, saw spreads narrow by 27% on average.

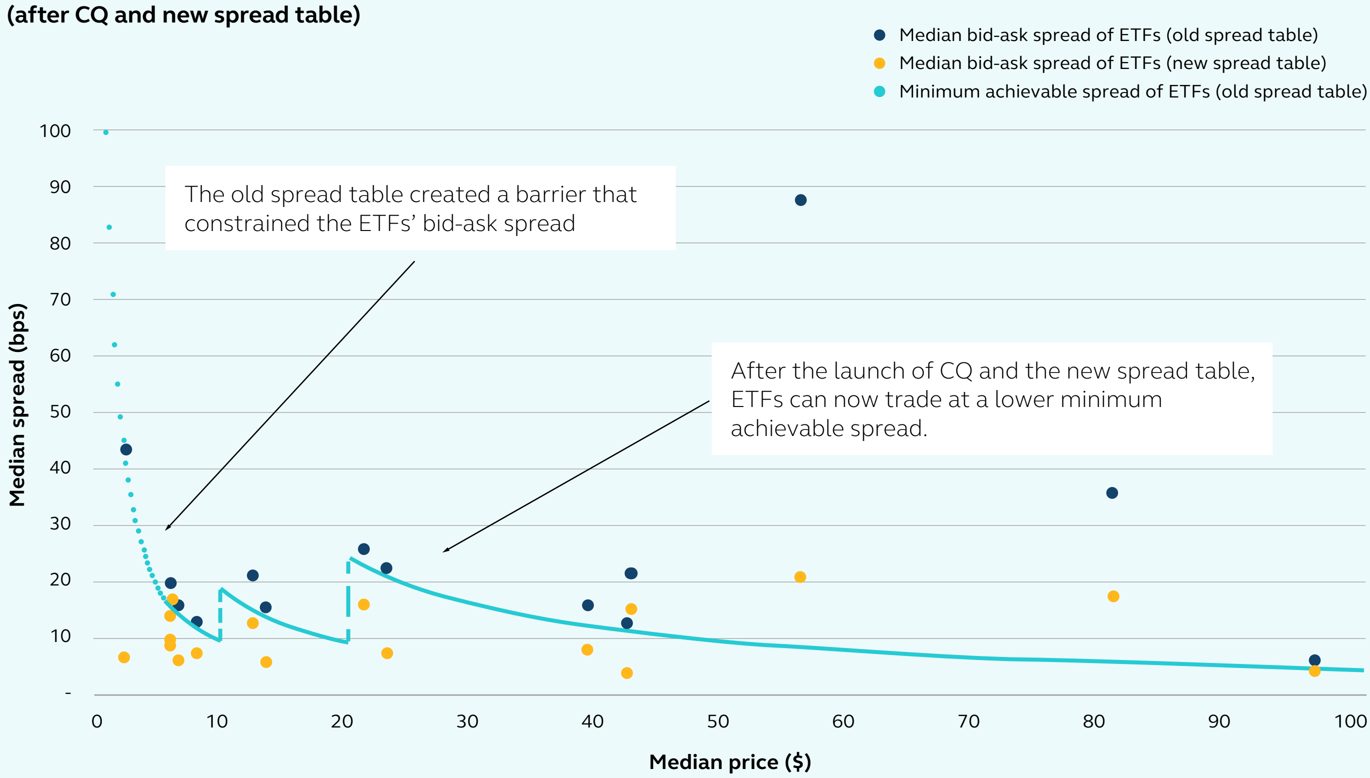
Figure 7: Changes in spreads by ADT



2 201 ETFs were listed and traded on HKEX over the period of 25 May 2020 to 31 August 2020 in which the analysis was conducted.

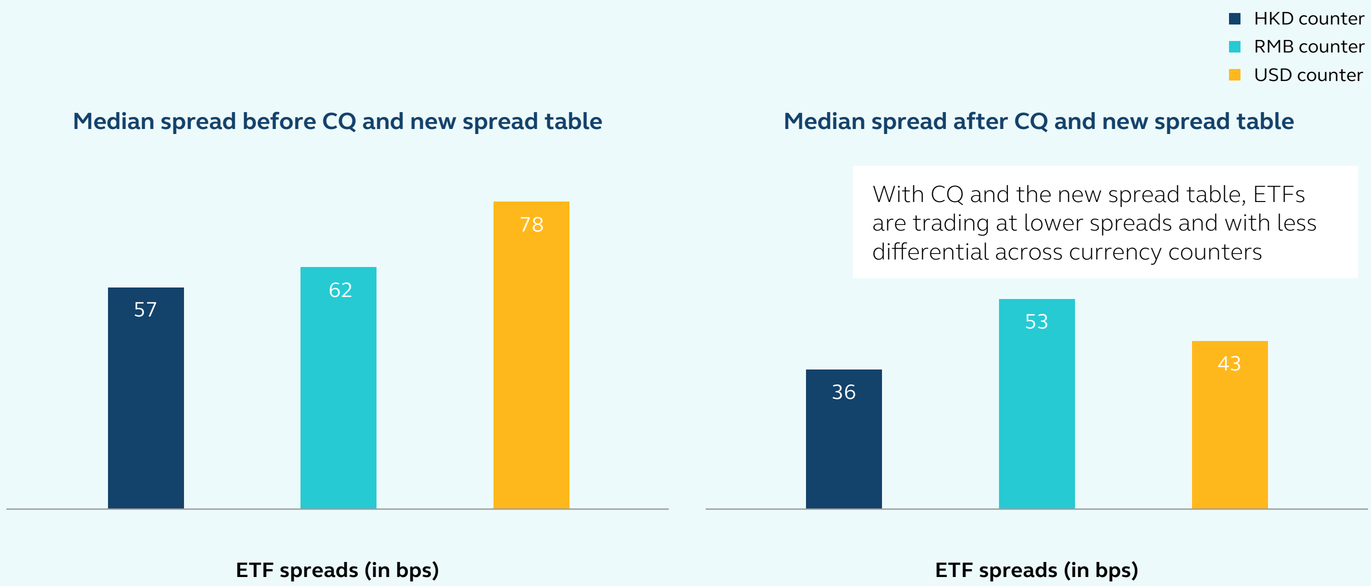
As reflected in figure 2, 90% of the top 20 most actively traded ETFs were previously considered to be tick-constrained. Following the changes made to the spread table and the subsequent reduction in tick size, the most active ETFs began trading at narrower spreads (see figure 8).

Figure 8: Median spread (bps) vs median price of top 20 most active ETFs, 1 June to 31 August 2020 (after CQ and new spread table)



Since the greatest tick size reduction in percentage terms occurs at the low end of the price range in our new spread table, low-priced ETFs such as US dollar counters benefit the most from the spread table change (see figure 9). This could help attract more liquidity into US dollar counters, encourage more listings of them in Hong Kong, and further internationalise the city's ETF market.

Figure 9: Spreads of the same ETF with multiple counters



What's next?

Our mission at HKEX is to continuously enhance market efficiency and reduce ETF trading costs for investors. In August 2020, the Hong Kong Government waived stamp duty for market makers on buys and sells of Hong Kong stocks as part of the ETF creation and redemption process. Figure 10 shows the potential commensurate savings on popular indices holding Hong Kong stocks. Investors can enjoy the stamp duty waiver by working with market makers, potentially reducing transaction costs by as much as 10 basis points.

Figure 10: Impact on creation and redemption fees of stamp duty waiver

Underlying Indices	HK equity (HSI)	HS Tech (HSTI)	H-shares (HSCEI)	China (MSCI)	Asia ex Japan (MSCI)	Emerging market (MSCI)
Portfolio Composition	100%	100%	100%	66%	35%	21%
Impact on creation/ redemption fees	↓ 10 bps	↓ 10 bps	↓ 10 bps	↓ 7 bps	↓ 3.5 bps	↓ 2 bps

Conclusion

The implementation of our new CQ market making regime and spread table for ETFs has contributed to significantly tightened bid-ask spreads. The improvement in spreads is especially evident in liquid ETFs, Hong Kong equity ETFs and low-priced US dollar counters. The narrower spreads and enhanced liquidity should benefit most listings in the city, allowing investors to trade a greater variety of ETFs and helping augment Hong Kong's status as Asia's ETF marketplace.

Benefits of new spread table and new market making obligations

Improve market quality

1 Raise market making standard by increasing participation rate and liquidity obligations

Greater flexibility

2 Give investors greater flexibility to react to market changes

Increase price efficiency

3 Allow market prices to adjust to new information more promptly, so that prices can better reflect the prevailing market conditions

Potential for lower costs

4 Lay the basis for further narrowing of bid-ask spreads, which can potenially lead to lower transaction costs

Contact us

For more information please visit www.hkex.com.hk/etp or contact ETFs@hkex.com.hk

Hong Kong Exchanges and Clearing Limited

8/F, Two Exchange Square,
8 Connaught Place,
Central, Hong Kong

hkexgroup.com | **hkex.com.hk**

info@hkex.com.hk
T +852 2522 1122
F +852 2295 3106