

A long-exposure photograph of a city street at night. The image shows light trails from cars and buses, creating streaks of white, yellow, and red. Tall buildings with lit windows and colorful neon signs (blue, green, red) are visible in the background. A green traffic light is in the foreground on the right.

1H 2022 KEY REVENUE ANALYSIS

September 2022

HKEX
香港交易所

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Key Updates



Key Updates

Changes in 1H 2022

Reduction of clearing fees of Northbound Trading

Nature	
<ul style="list-style-type: none"> In April 2022, ChinaClear lowered the A-share transfer fees from 0.002% to 0.001% of the consideration of the trades, effective from 29 April 2022 Clearing fees received by HKEX were reduced as follows: 	
Total fees prior to 29 Apr 2022	Total fees effective from 29 Apr 2022
$ADT(NB) \times 0.002\% \times TDs(NB) / 2 + ADT(NB) \times 0.002\% \times TDs(NB)$	$ADT(NB) \times 0.001\% \times TDs(NB) / 2 + ADT(NB) \times 0.002\% \times TDs(NB)$

Implications
~ HK\$1.3 million annually per RMB 1 billion of ADT(NB) ⁽¹⁾

Increase in weighting of newly launched derivatives products

<ul style="list-style-type: none"> Increased popularity of newly launched derivatives products, which are charged at lower fees as compared to HSI Futures and Options, may result in a lower average fee per contract traded on HKFE Unit fees for the newly launched derivatives products as compared to other flagship products are set out as follows: 		
Key Products	Unit fee (as of Jun 2022)	Unit fee (as of Aug 2022)
HSI Futures & Options	HK\$10	HK\$10
HSCEI Futures & Options + Mini HSI Futures	HK\$3.5	HK\$3.5
Mini HSCEI Futures + Mini HSI options	HK\$2	HK\$2
HS Tech Futures & Options ⁽²⁾	HK\$2.5	HK\$2.5
RMB Currency Futures – USD/CNH Futures	RMB 8.0	RMB 8.0
MSCI China A50 Connect (USD) Index Futures ⁽³⁾	waived	US\$0.5
MSCI Taiwan (USD) Index Futures ⁽⁴⁾	waived	US\$1

<ul style="list-style-type: none"> Average fee per contract per side dropped from \$5.76 in 1H 2021 to \$5.14 in 1H 2022. As the fee holiday for MSCI A50 Connect (USD) Index Futures and MSCI Taiwan (USD) Index Futures ended on 30 June 2022, the average fee per contract will continue to change.
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1. Assuming trading days for Northbound Trading as 230 (source: Year 2021) and exchange rate at 1.16247 (source: @ 31 July 2022)

2. Hang Seng TECH Index Futures and Options were launched on 23 Nov 2020 and 18 Jan 2021 respectively with unit fee of HK\$5. Since launch, a market-wide 50% trading fee discount has been granted, and will continue until further notice.

3. MSCI China A50 Connect (USD) Index Futures were launched on 18 Oct 2021 with unit fee of US\$1. Trading fee waiver has been granted since launched and up to 30 Jun 2022. From 1 Jul 2022, the trading fee waiver has been replaced by 50 per cent trading fee discount.

4. MSCI Taiwan (USD) Index Futures were launched on 6 Jul 2020 with unit fee of US\$1. Trading fee waiver has been granted since 14 Aug 2020 and up to 30 Jun 2022.



Key Updates

Changes in 1H 2022

	Nature	Implications
Publication of number of newly listed DWs and CBBCs	<ul style="list-style-type: none"> The number of newly listed DWs and CBBCs during the month is now published and added to HKEX Monthly Market Highlights HKEX Monthly Market Highlights 	<p>More transparency in estimating our revenue</p> <p>No. of newly listed DWs x \$60,000 (for first issue) or \$40,000 (for subsequent issue)</p> <p>No. of newly listed CBBCs x \$18,000 (for first issue) or \$12,000 (for subsequent issue)</p>
Electronic IPO fees	<ul style="list-style-type: none"> Fees are chargeable at \$15 per application instruction (irrespective of successful allotment or not) for eIPO 	Lower fees due to fewer IPOs
LME Nickel claims	<ul style="list-style-type: none"> Currently, the LME and LME Clear have been named as defendants in two judicial review claims filed in the English High Court. As the judicial reviews are still at an early stage, the LME does not currently have sufficient information to estimate the financial effect (if any) of the claims, the timing of the ultimate resolution of the proceedings, or what the eventual outcomes might be. However, the LME management is of the view that the claims are without merit and the LME will contest them vigorously. No provision has been made against the claims 	Legal costs and regulatory costs will continue to be incurred in 2H 2022.



Key Updates

Changes in 1H 2022

	Nature	Implications
Net Investment Income (Internal Portfolio)	<ul style="list-style-type: none">■ LME Margin Funds: capped at 20bps;■ HK Margin Funds:<ul style="list-style-type: none">■ kept ~30% overnight and ~65% in time deposits with 7 months weighted maturity;■ rebates to EPs based on the formula: $(1M\ HIBOR/2) - 25\ bps$	For HK Margin Funds, the net yield may reduce slightly in the next few months as interest rates have been increasing quickly. The rebate to participants will increase because 1-month HIBOR has risen rapidly, while the time deposits will only reprice upon maturity.
Net Investment Income (External Portfolio)	<ul style="list-style-type: none">■ Redeem \$2bn in 2H22	Expect better protection against market down trends. Accuracy of the regression formula will be reduced.



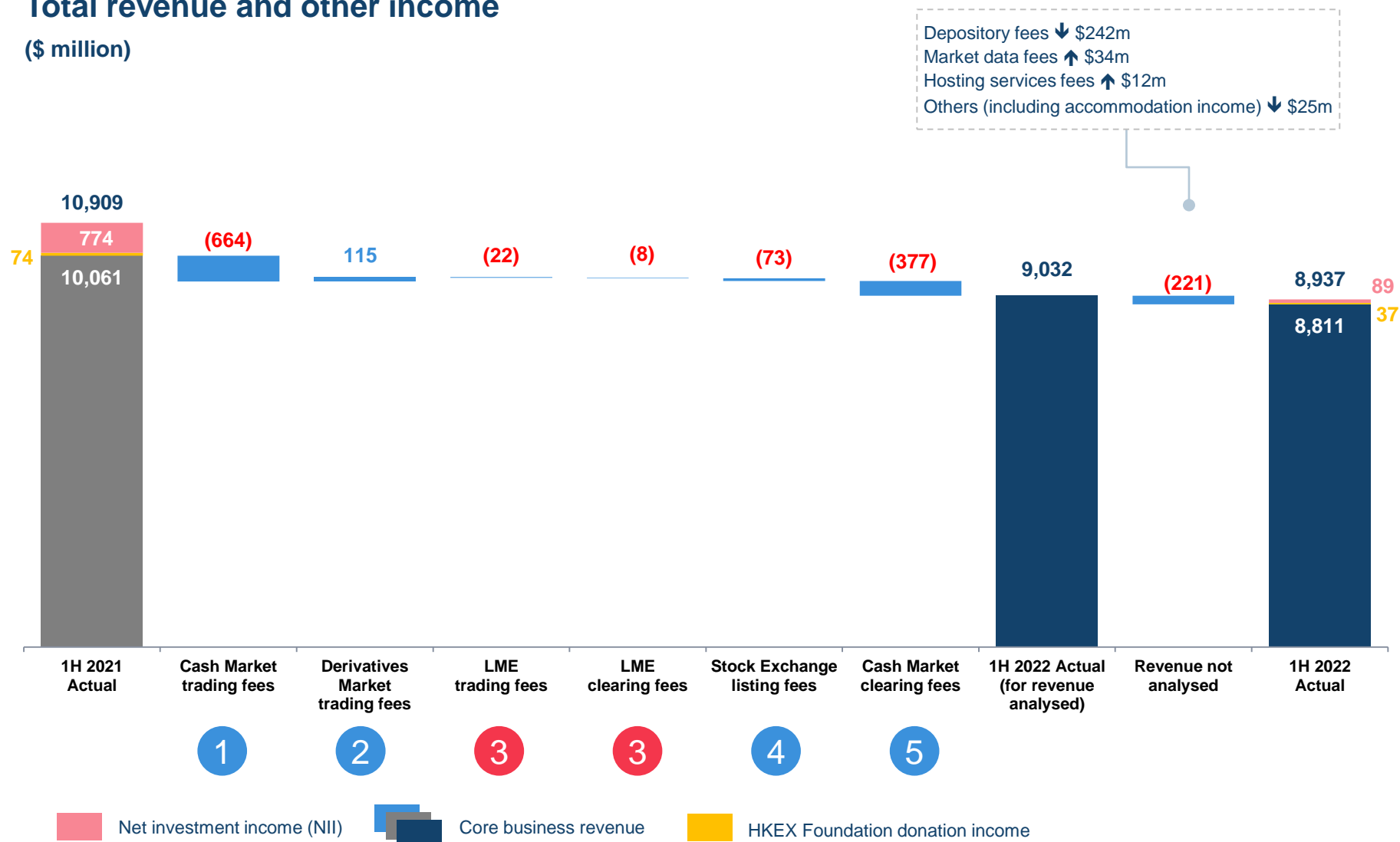
1H 2022 Key Revenue Analysis



Revenue movements 1H 2022 vs 1H 2021

Total revenue and other income

(\$ million)

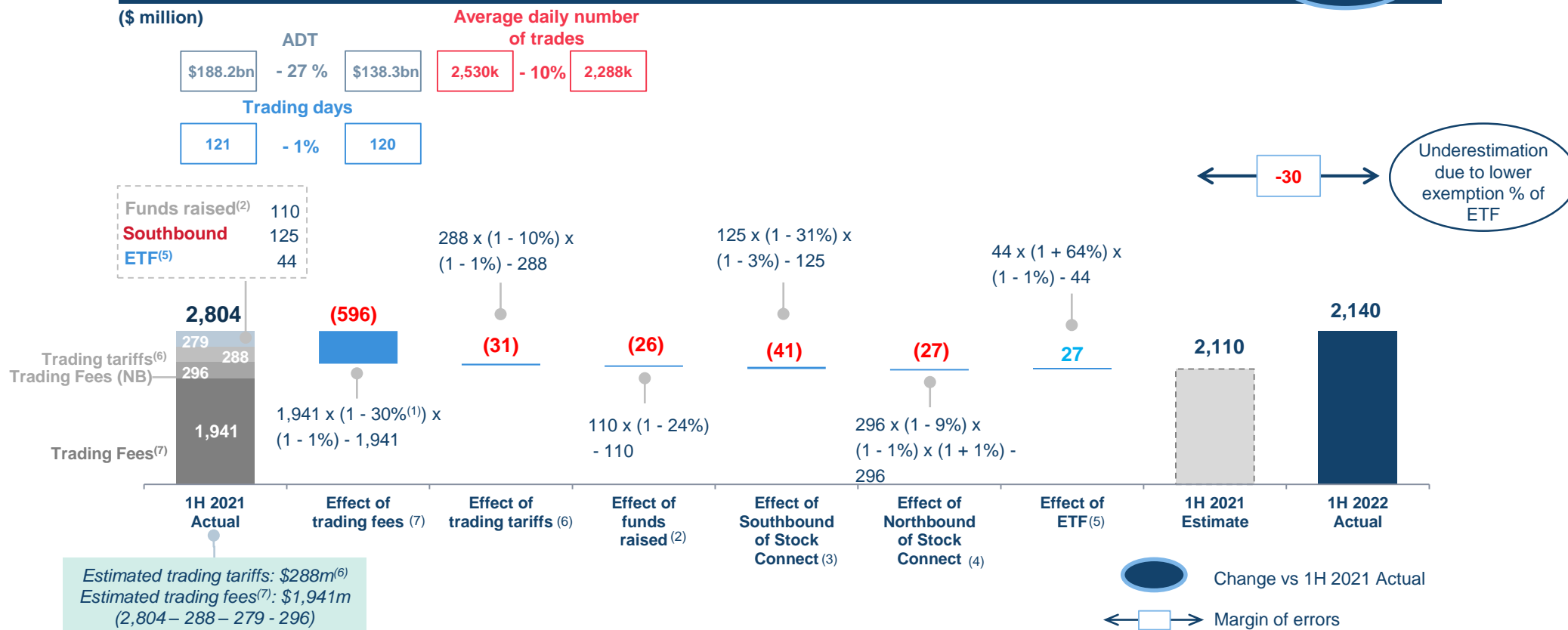


Cash Market trading fees ¹

Estimate based on volume change

Trading fees and trading tariffs

-664



Cash Market trading fees and trading tariffs move closely with changes in total value of trades and number of trades

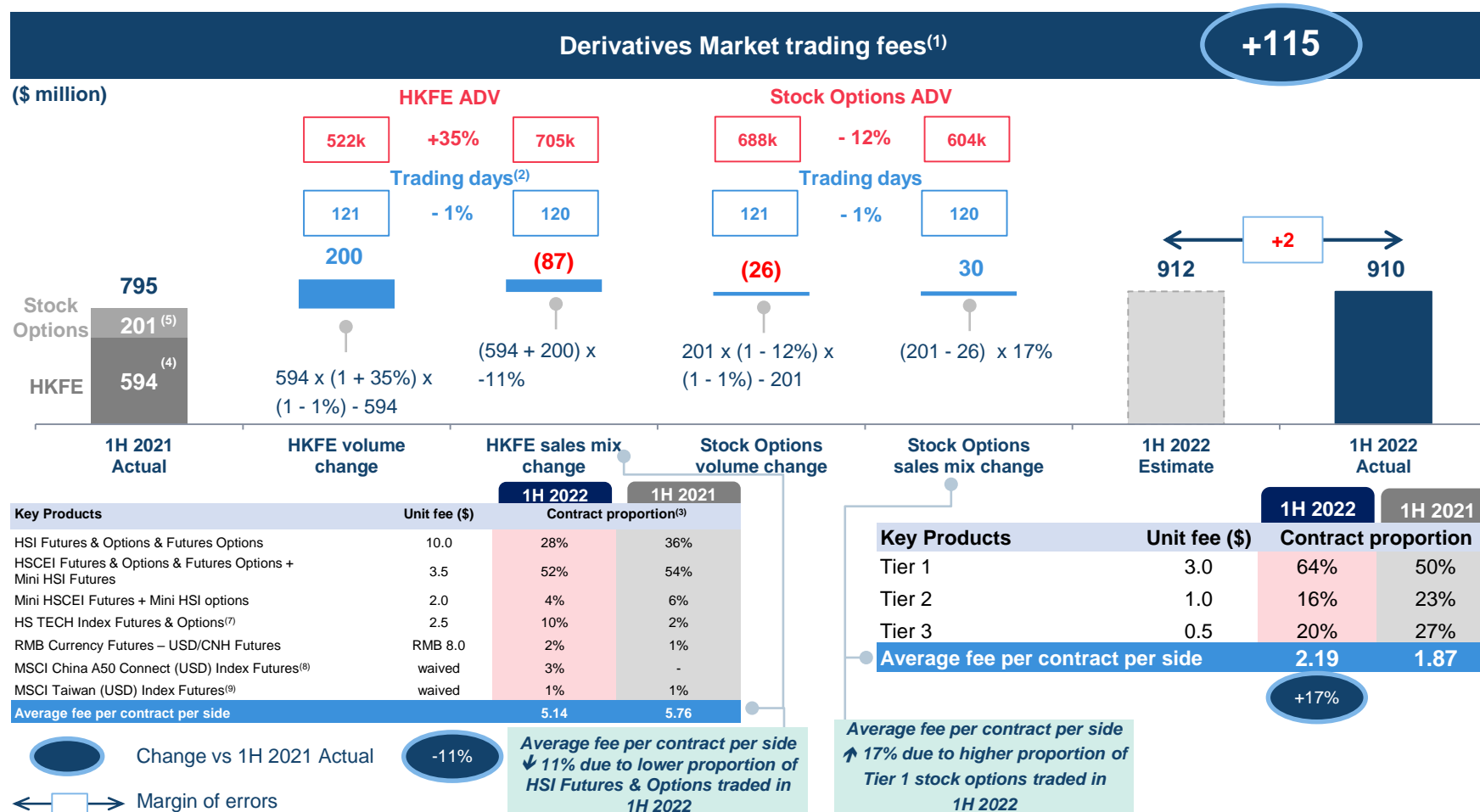
- Refers to % change in Headline ADT (ie, Stock Exchange trades (including DWs, CBBCs and warrants)) less SB ADT/2 less ETF ADT (including L&I Product): 1H 2022: \$109.9bn; 1H 2021: \$157.0bn; ↓ 30%
(Headline ADT – 1H 2022: \$138.3bn; 1H 2021: \$188.2bn
SB ADT – 1H 2022: \$33.2bn; 1H 2021: \$48.1bn;
ETF (including L&I Product) ADT – 1H 2022: \$11.8bn; 1H 2021: \$7.2bn)
- Funds raised x 0.005% x 2 sides (Funds raised – 1H 2022: \$842.4bn; 1H 2021: \$1,104.8bn; ↓ 24%)
- Southbound (SB) trading fees: ADT of SB x no. of trading days x 0.005% x 50%
(SB ADT: 1H 2022: \$33.2bn; 1H 2021: \$48.1bn; ↓ 31%; No. of trading days: 1H 2022: 108 days; 1H 2021: 111 days; ↓ 3%)

- Northbound (NB) trading fees: ADT of NB x no. of trading days x 0.00487% x 40%
(NB ADT: 1H 2022: RMB103.9bn; 1H 2021: RMB114.4bn; ↓ 9%; No. of trading days: 1H 2022: 111 days; 1H 2021: 112 days; ↓ 1%; Exchange rate: 1H 2022: 1.20; 1H 2021: 1.19; ↑ 1%)
- ETF (including L&I Product) trading fees = ADT x 0.005% x 2 sides x no. of trading days x (1 – exemption %)
(ADT – 1H 2022: \$11.8bn; 1H 2021: \$7.2bn; ↑ 64%);
Effective from 31 May 2021, the fee exemption for market makers was adjusted to reflect the ETF's ADT over a 12-month period and its relevant investment exposure.
- Trading tariffs of equity products traded on the Stock Exchange (included under the Cash segment) of \$236m is disclosed in the 2021 Interim Report. Trading tariffs of DWs, CBBCs and warrants (included under the Equity and Financial Derivatives Segment) is estimated by average daily no. of trades (433k) x no. of trading days (121) x \$0.5 x 2 sides = \$52m.
- Excluding trading fees arising from funds raised, Stock Connect and ETFs (including L&I Products)



Derivatives Market trading fees 2

Estimate based on volume and sales mix change



Derivatives Market trading fees generally move with the total number of contracts traded and average fee per contract

1. Includes trading fees allocated to the Post Trade segment

2. There were 2 holiday trading days in 1H 2022 (1H 2021: Nil) for certain futures contracts. As the ADV is calculated as sum of individual contracts, and majority of the contracts are only traded on non-holidays, only the number of non-holiday trading day of 120 is used for the calculation.

3. Calculated based on % of total contracts of key products as listed in the table above

4. Trading fees of HKFE products = Fees included under Equity and Financial Derivatives segment (\$468m, disclosed in 2021 Interim Report) + Fees allocated to Post Trade segment (estimated by ADV (522k) x no. of trading days (121) x fee per contract (\$2 per note 6 below) = \$126m), and round to \$594m.

5. Trading tariffs of stock options = Fees included under Equity and Financial Derivatives segment (\$146m, disclosed in the 2021 Interim Report) + Fees allocated to Post Trade segment (estimated by ADV (688k) x no. of trading days (121) x tariff per contract (\$0.66 per note 6 below) = \$55m), and round to \$201m.

6. Fee/tariff per contract is calculated based on information disclosed in 2021 Annual Report: Trading fees of HKFE products allocated to the Post Trade segment (\$260m) / (ADV (538k) / no. of trading days (248)) = \$2 per contract. Trading tariffs of stock options allocated to the Post Trade segment (\$104m) / (ADV (637k) / no. of trading days (248)) = \$0.66 per contract.

7. Hang Seng TECH Index Futures and Options were launched on 23 Nov 2020 and 18 Jan 2021 respectively with unit fee of HK\$5. Since launch, a market-wide 50% trading fee discount has been granted, and will continue until further notice.

8. MSCI China A50 Connect (USD) Index Futures were launched on 18 Oct 2021 with unit fee of US\$1. Trading fee waiver has been granted up to 30 Jun 2022. From 1 Jul 2022, the trading fee waiver has been replaced by 50% trading fee discount.

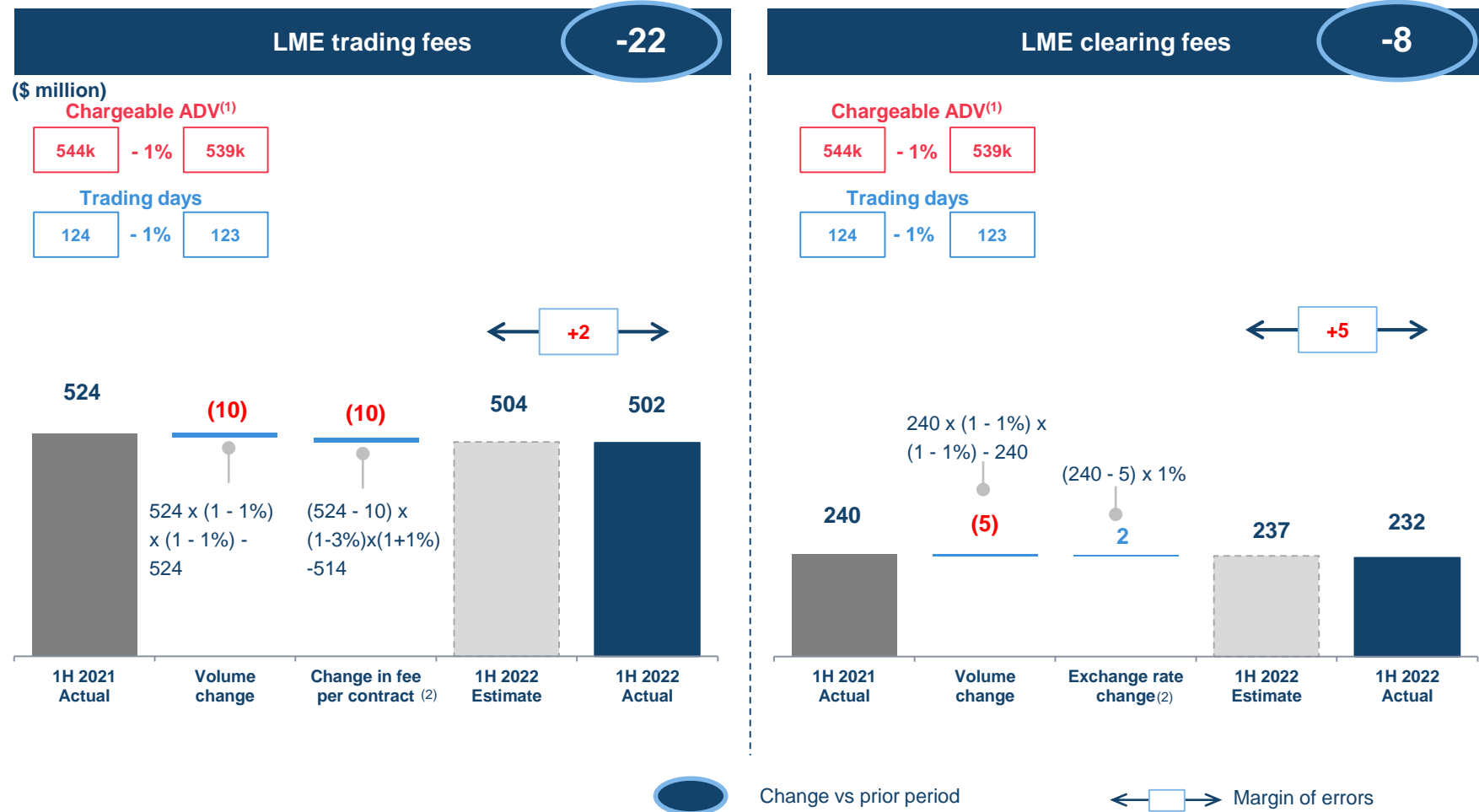
9. MSCI Taiwan (USD) Index Futures were launched on 6 Jul 2020 with unit fee of US\$1. Trading fee waiver has been granted since 14 Aug 2020 and up to 30 Jun 2022.



LME trading and clearing fees

3

Estimate based on volume change and change in fee per contract



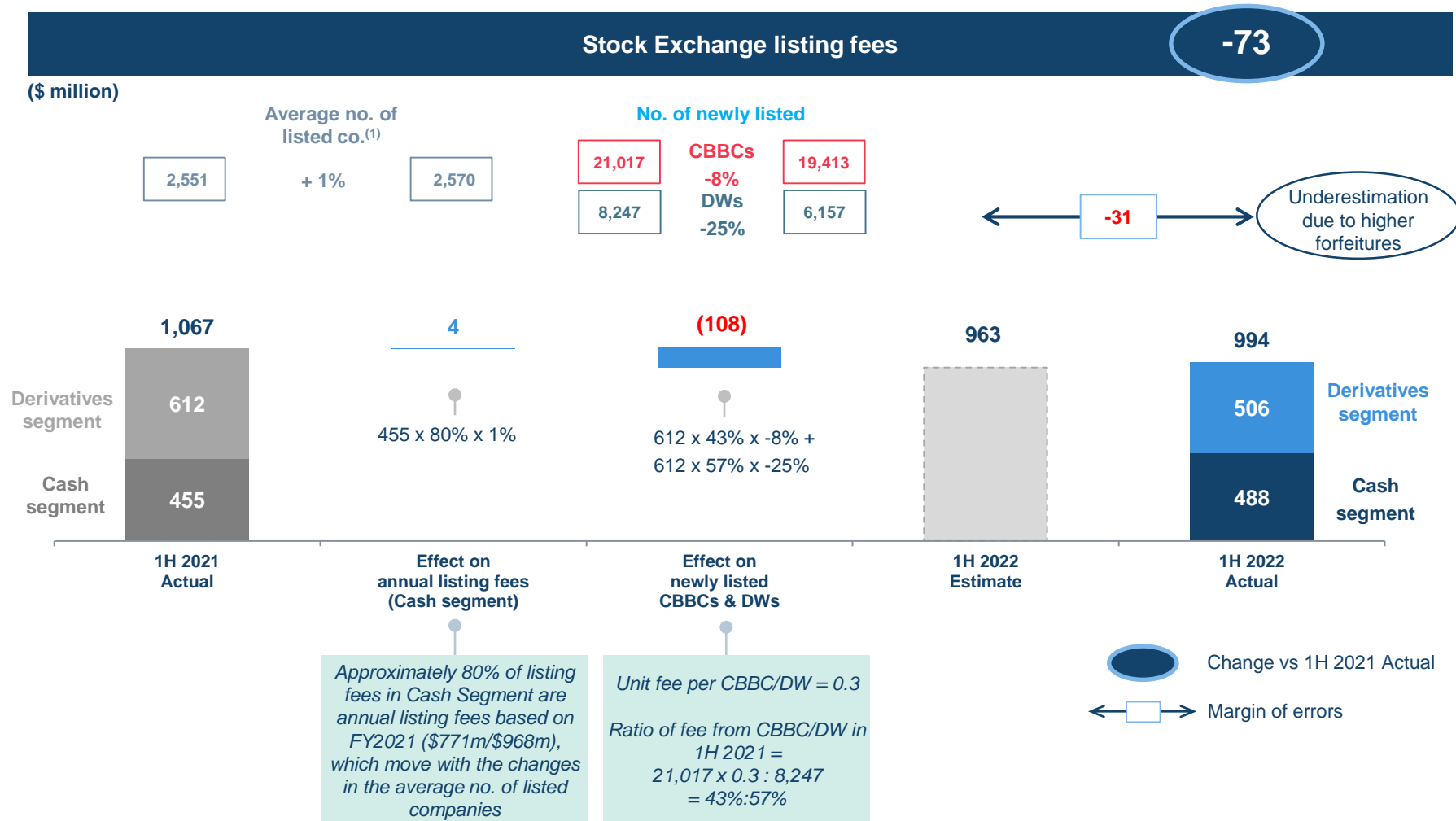
LME and LMEC fees generally move with total number of contracts traded and average fee per contract

- Chargeable ADV excludes Admin Trades (which are chargeable at a lower trading fee rate of US\$0.04 per contract and a lower clearing fee rate of US\$0.02 per contract) and other non-chargeable trades.
- Due to COVID-19, LME suspended trading activity on the Ring from 23 March 2020 to 5 September 2021. As the trading fees of Non-Ring trades are higher than Ring's, lower fee per contract (-3% per footnote 3 below) is taken into consideration in the 1H 2022 revenue projection. Exchange rate USD vs HKD: 1H 2022: 7.83; 1H 2021: 7.76; ↑ 1%
- Average trading fee per contract is estimated by LME trading fees / Chargeable ADV / no. of trading days / 2 sides – Q1 2022: \$3.78; 1H 2021: \$3.88; ↓ 3%
(LME trading fees – Q1 2022: \$280m; 1H 2021: \$524m;
Chargeable ADV – Q1 2022: 588k; 1H 2021: 544k
Trading days – Q1 2022: 63; 1H 2021: 124)



Stock Exchange listing fees 4

Estimate based on no. of listed companies and newly listed DWs/CBBCs



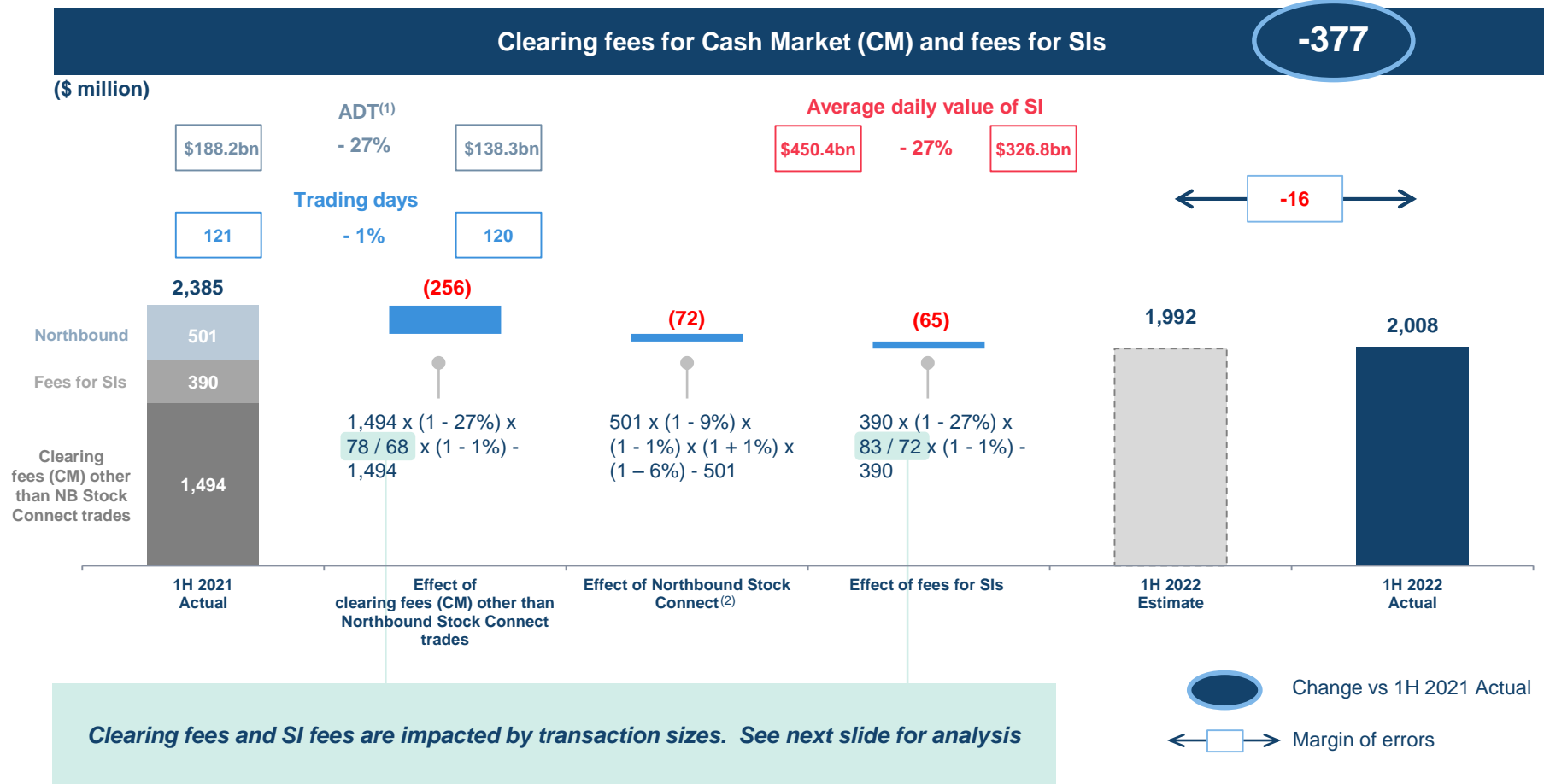
Stock Exchange listing fees move closely with changes in no. of listed companies and newly listed DWs/CBBCs, but are also impacted by number of forfeitures and withdrawn IPO applications during the periods.



1. Average number of listed companies represents the average number of listed companies at month end.

Cash Market clearing fees 5

Estimate based on volume change



Clearing fees and SI fees move with total value of trades and total value of SIs but are also impacted by transaction sizes of the trades/SIs.

1. For Stock Exchange trades (including DWs, CBBCs and warrants), excluding stock options

2. Northbound (NB) ADT - 1H 2022: RMB103.9bn; 1H 2021: RMB114.4bn; ↓9%;

No. of trading days: 1H 2022: 111 days; 1H 2021: 112 days; ↓1%;

Exchange rate: 1H 2022: 1.20; 1H 2021: 1.19; ↑1%;

Effective from 29 Apr 2022 (38 trading days till 30 Jun 2022), ChinaClear lowered the A-share transfer fees. Clearing fees received by HKEX were reduced by 16.7%

from $ADT(NB) \times 0.002\% \times TDs(NB) / 2 + ADT(NB) \times 0.002\% \times TDs(NB)$

to $ADT(NB) \times 0.001\% \times TDs(NB) / 2 + ADT(NB) \times 0.002\% \times TDs(NB)$;

Fee reduction: Impact for 1H 2022: 16.7% / 111 TDs x 38 TDs = 6%

3. The impact of Southbound fees is immaterial and therefore not included in the analysis.

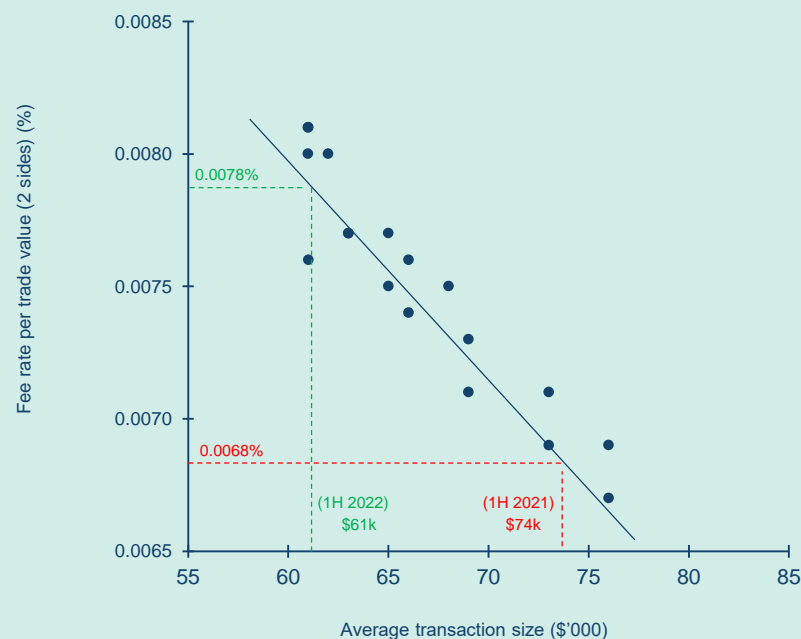


Cash Market clearing fees 5

Impact of transaction sizes of the trades / SIs

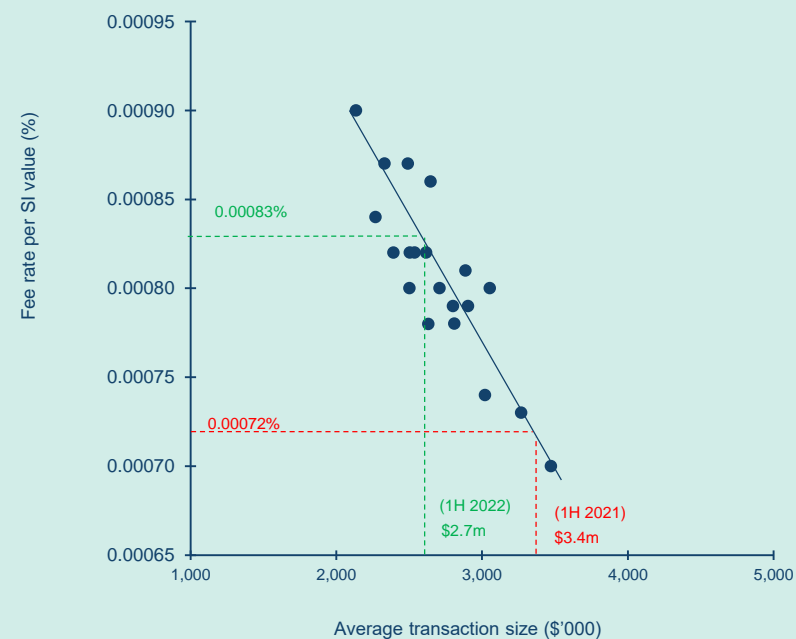
Clearing fees for Cash Market (CM)

Clearing fees are subject to maximum and minimum fees per trade. The decrease in average transaction size (1H 2022: \$61k; 1H 2021: \$74k) resulted in a higher proportion of Cash Market trades being subject to the minimum fee of \$2. The fee rate per trade value of various average transaction sizes based on actual fee rates calculated from historical quarterly results from Q1 2017 to Q1 2022 are set out as follows:



Fees for SIs

Fees for SIs are subject to maximum and minimum fees per trade. The decrease in average transaction size (1H 2022: \$2.7m; 1H 2021: \$3.4m) resulted in a lower proportion of SI transactions being subject to the maximum fee of \$100. The fee rate per SI value of various average transaction sizes based on actual fee rates calculated from historical quarterly results from Q1 2017 to Q1 2022 are set out as follows:



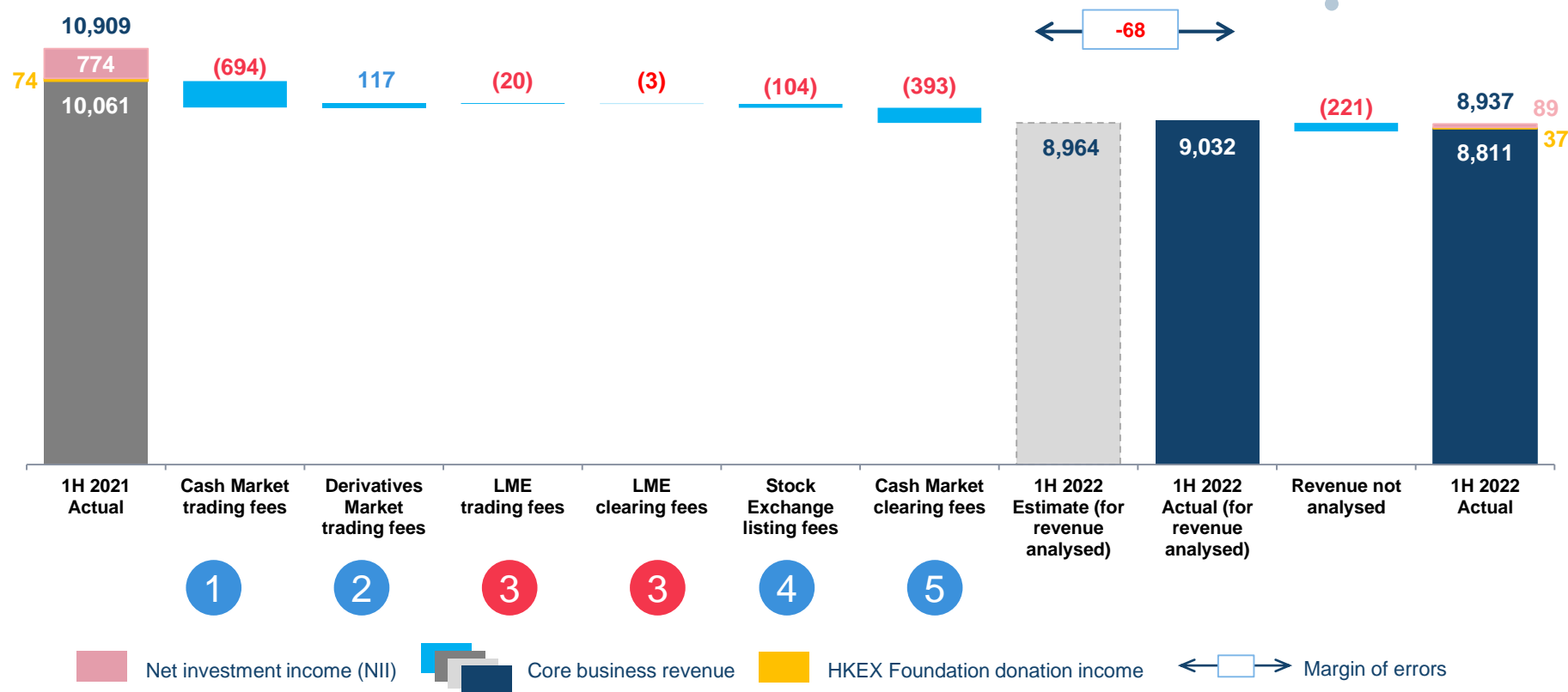
In general, if the average transaction size decreases, it will have a positive impact on the clearing fees and vice versa



Estimate of 1H 2022 revenue

Total revenue and other income (\$ million)

- 1) Depository fees ↓ \$242m (due to lower eIPO fees)
- 2) Market data fees ↑ \$34m or 7%, (2022 1H: \$546m; 2021 1H: \$512m)
Hosting services fees ↑ \$12m or 10% (2022 1H: \$137m; 2021 1H: \$125m)
(due to organic growth)
- 3) Others (including accommodation income) ↓ \$25m



**Margin of errors for revenue estimates (excluding NII, donation income and revenue not analysed)
was \$68m or 0.75%**

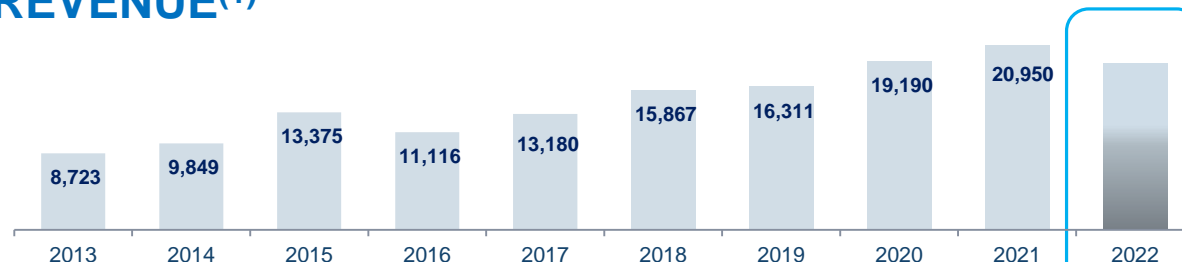


EBITDA margin

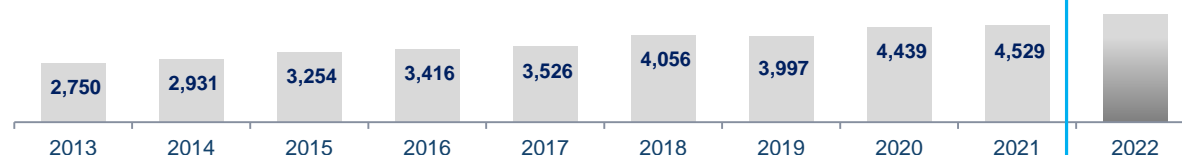
EBITDA margin generally moves in the same direction with revenue

(\$ million)

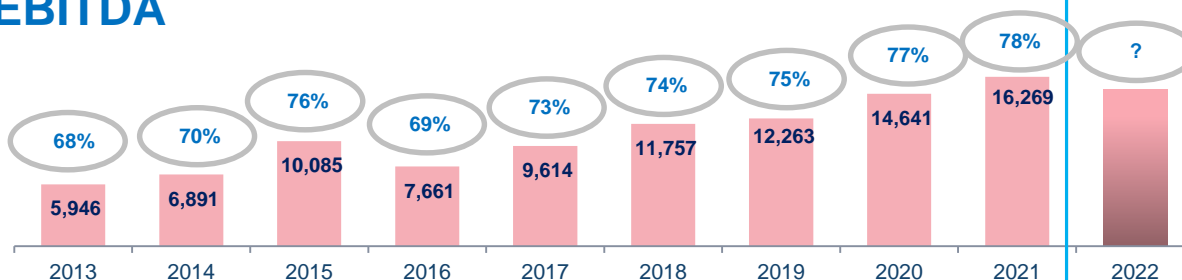
REVENUE⁽¹⁾



OPEX⁽²⁾



EBITDA



EBITDA margin = EBITDA / Revenue less transaction-related expenses

A significant proportion of opex is fixed in nature

We manage the business for the long-term and we will continue to invest in clients, technology, talent and risk management, to deliver our vision of building the Marketplace of the Future.

We expect wage inflation and the competition for talent continue in the coming months.

If revenue comes under significant pressure, certain non-critical projects may be deferred.



1. Represents gross revenue and other income before deducting transaction-related expenses (2013: \$27m; 2014: \$27m; 2015: \$36m; 2016: \$39m; 2017: \$40m; 2018: \$54m; 2019: \$51m; 2020: \$110m; 2021: \$152m)
 2. Opex excludes transaction-related expenses, depreciation and amortisation, finance costs, share of results of joint ventures, and certain exceptional costs.

Investment Portfolio

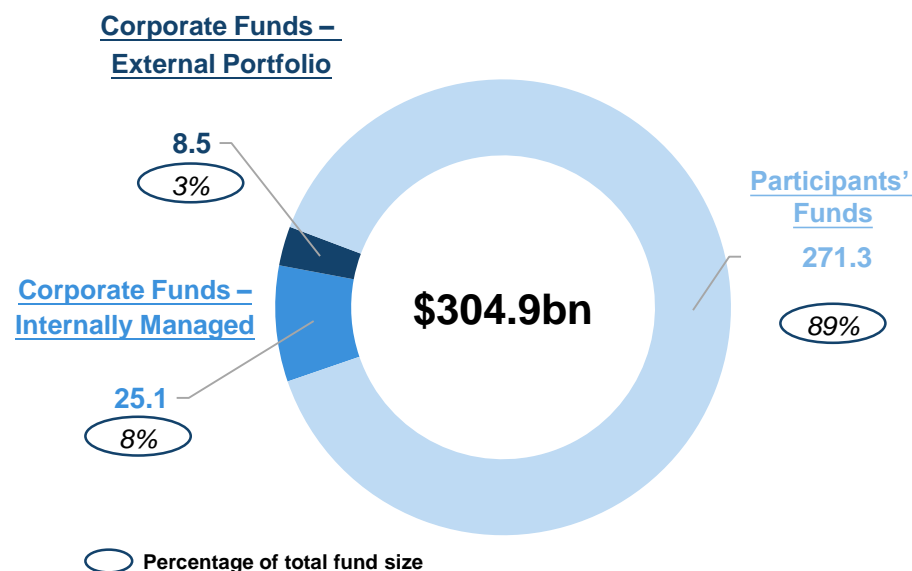
Overview

The Group's Investment Portfolio comprises:

1. Participants' Funds: \$271.3 billion ¹ (Margin Funds and Clearing House Funds)
2. Corporate Funds – Internally Managed: \$25.1 billion ¹
3. Corporate Funds – External Portfolio: \$8.5 billion ^{1,2} (non-core, actively managed by an investment consultant)

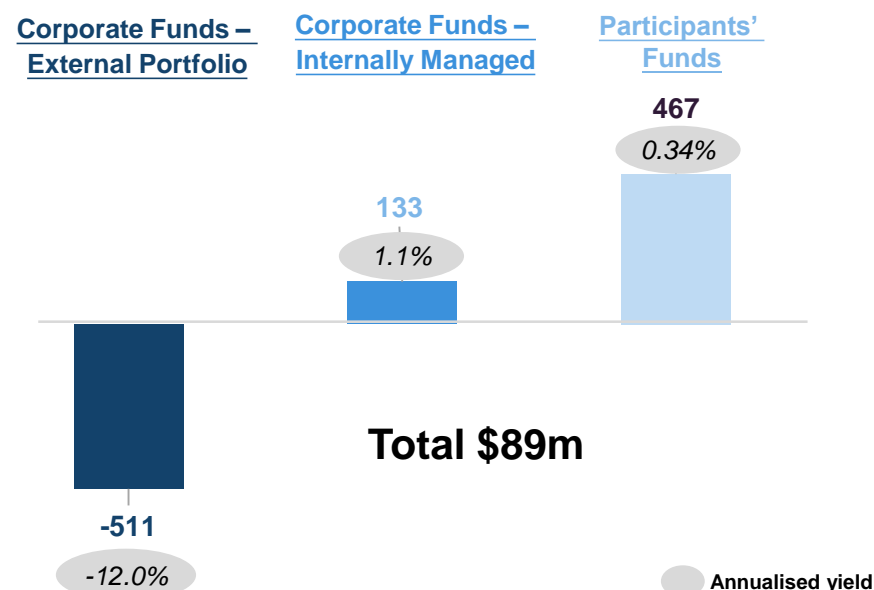
Average Fund Size¹

(HK\$ billion)



Net Investment Income¹

(HK\$ million)



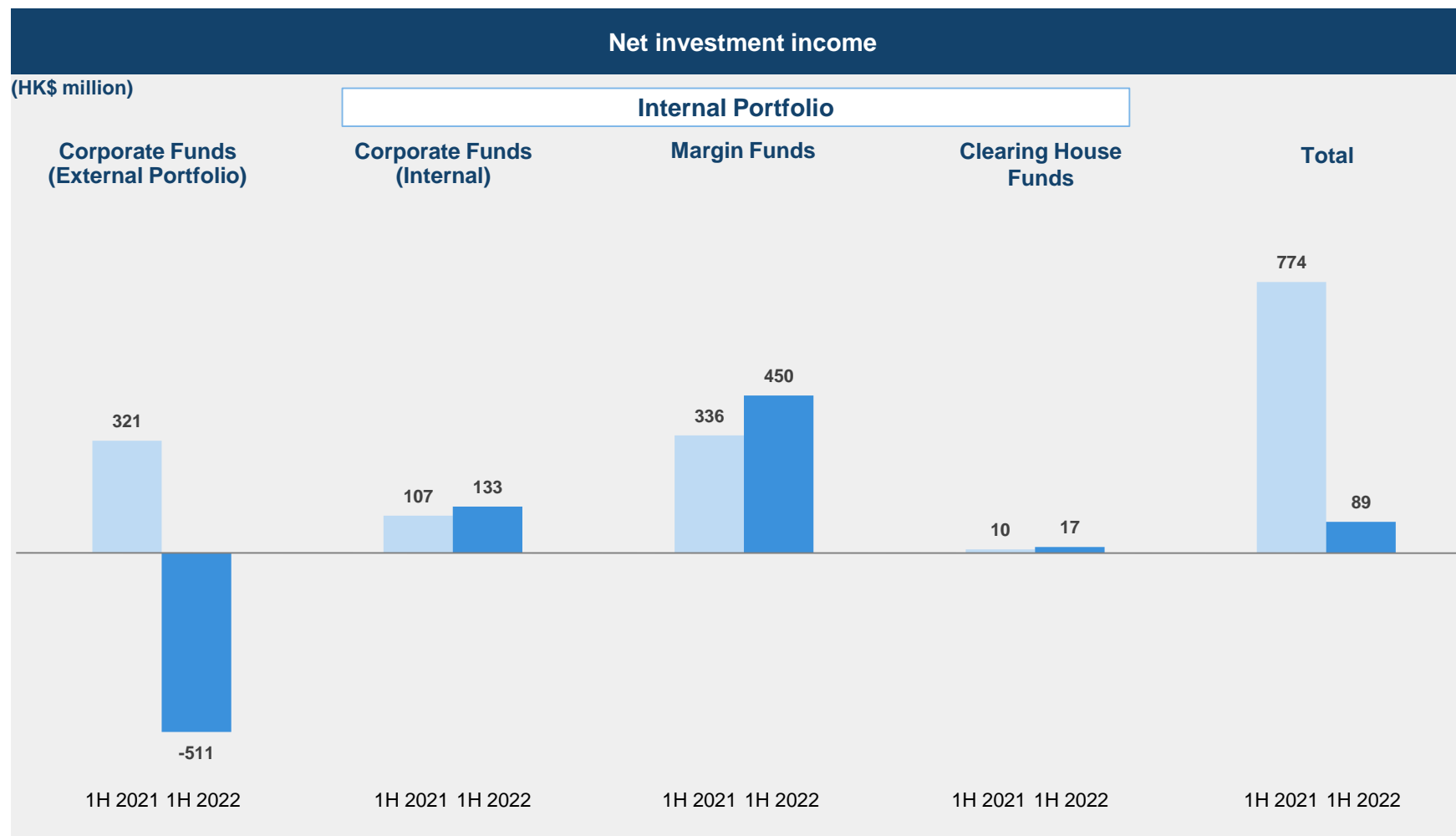
During 1H 2022, the performance of the External Portfolio was down as the investment environment deteriorated sharply due to intensifying concerns on inflationary pressures, on-going geopolitical conflicts, tighter monetary policy, continued impact of the pandemic and weakening global economic outlook. Internal Portfolio benefited from increasing interest rates.



1. For the period 1H 2022, excludes investments in minority stakes of unlisted companies
2. \$8.3bn as of 30 June 2022; average fund size for 1H computed based on average of the fund size at 31 Dec 2021 and 30 Jun 2022
3. Excludes accommodation income and net of interest rebates

Net Investment Income

Net Investment Income (NII) affected by broader macro economic backdrop and interest rate environment in 1H 2022

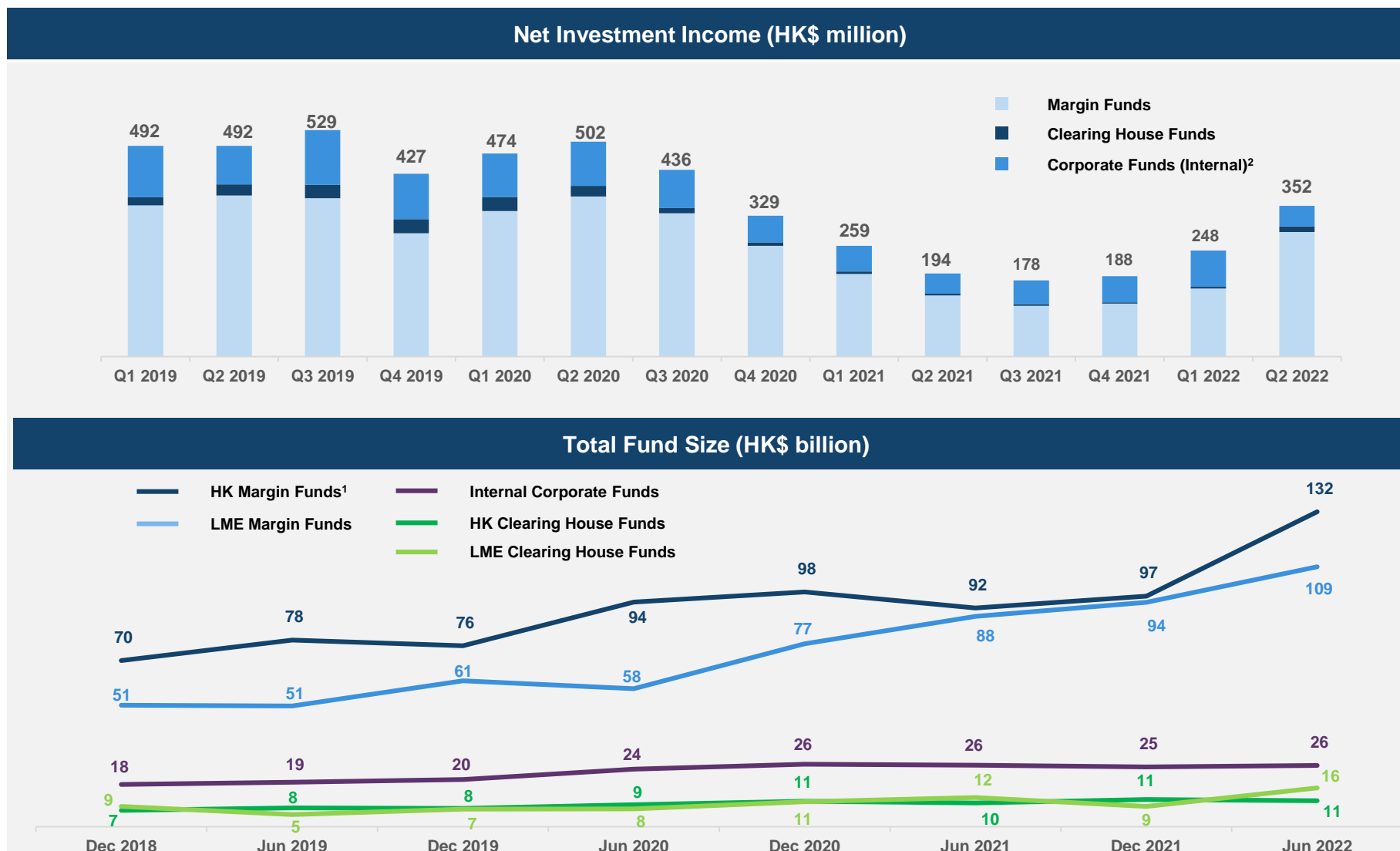


Net investment income for 1H 2022 decreased compared with 1H 2021, due to reduced investment income from External Portfolio which was partly offset by the gain on the internal funds



Internal Portfolio

Net investment income mainly contributed by Margin Funds, and affected by fund size and short-term money market rates - beginning to trend upwards with higher interest rates



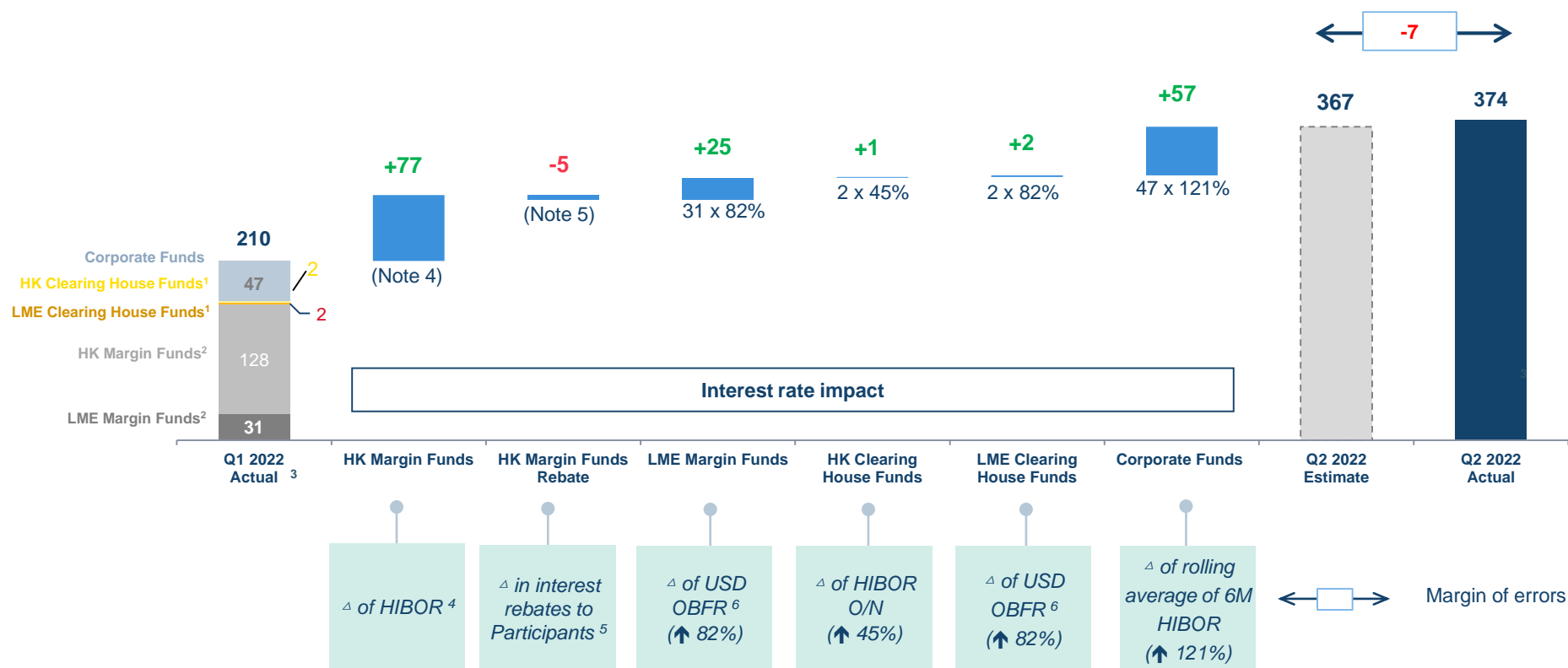
1. Excludes Settlement Reserve Fund and Settlement Guarantee Fund paid to ChinaClear and margin receivable from Clearing Participants
2. Excludes income from investments in minority stakes of unlisted companies

Internal Portfolio

High-level Illustration

Net Investment Income for Internal Portfolio

(\$ million)



The accuracy depends on the estimation on (1) fund size which are dependent on clearing members' open interests and margin requirements imposed by clearing houses; (2) relative split of fund size between LME and Hong Kong; (3) actual investment return and its relative performance against benchmark interest rates; (4) actual proportion of funds kept overnight; (5) FX; and (6) currency breakdown of the funds



- Detail footnote on slide 23

Internal Portfolio

Illustration of 182-day rolling average rate of 6M HIBOR

Using 182-day rolling average rate to reflect the lagging effect of higher interest rates flowing through to the Internal Portfolio, as existing time deposits slowly mature and rolled over at higher rate

For Q2

Calculating period

Date	Start	End	182-day rolling average
1-Apr-22	1-Oct-21	1-Apr-22	0.43647
2-Apr-22	2-Oct-21	2-Apr-22	0.44045
3-Apr-22	3-Oct-21	3-Apr-22	0.44443
.			
.			
29-Jun-22	29-Dec-21	29-Jun-22	1.04240
30-Jun-22	30-Dec-21	30-Jun-22	1.05374

Q2 Average 0.69212

**Quarterly change 0.37866
121%**

For Q1

Calculating period

Date	Start	End	182-day rolling average
1-Jan-22	3-Jul-21	1-Jan-22	0.25662
2-Jan-22	4-Jul-21	2-Jan-22	0.25694
3-Jan-22	5-Jul-21	3-Jan-22	0.25727
.			
.			
30-Mar-22	29-Sep-21	30-Mar-22	0.42839
31-Mar-22	30-Sep-21	31-Mar-22	0.43248

Q1 Average 0.31346

Due to the effect of existing time deposits slowly maturing and rolled over, it is important to consider the lagging effect especially when the yield curve is shifting. This can be illustrated with the 182-day rolling average rate of 6M HIBOR. In this case, the Q2 2022 vs Q1 2022 change in portfolio yield is +38bps or +121%



Internal Portfolio (Footnote)

1. Nil from total Clearing House Funds of \$4m is disclosed in the Q1 2022 Results Announcement. Nil from LME Clearing House Funds of \$2m is estimated by the average fund size of LME in Q1 2022 (assuming split between HK and LME is same as that as of 31 Dec 2021) multiplied by Q1 2022 average of USD OBFR of 0.11% p.a. The remaining balance of \$2m is assumed to come from HK Clearing House Funds.

Average Clearing House Funds in Q1 2022: \$18.8bn;
Split between HK and LME @ 31 Dec 2021: \$11bn : \$9bn = 57% : 43%

2. Nil from total Margin Funds of \$159m is disclosed in the Q1 2022 Results Announcement. Nil from LME Margin Funds of \$31m is estimated by the average fund size of LME in Q1 2022 (assuming split between HK and LME is same as that as of 31 Dec 2021) multiplied by Q1 2022 average of USD OBFR of 0.11% p.a. The remaining balance of \$128m is assumed to come from HK Margin Funds.

Average Margin Funds size in Q1 2022: \$233.0bn
Split between HK and LME @ 31 Dec 2021: \$97bn : \$94bn = 51% : 49%

3. Excludes investment income from FX and long-term equity investments
4. Interest rate impact on HK Margin Funds is estimated by multiplying the average fund size of different maturity tenors in Q1 (assuming split between HK and LME is same as that as of 31 Dec 2021) by the change in the respective HIBOR rate = HKD 77m:

(Overnight HIBOR increase from Q1 to Q2) x (Amount kept at Overnight)
= (3bps p.a.) x (\$233.0bn x 51% X 30% X 91/365) = HKD 2.7m

(6-month rolling aver. of 6M HIBOR increase from Q1 to Q2) x (Long Term Time Deposits)
= (38bps p.a.) x (\$233.0bn x 51% X 66% X 91/365) = HKD 74.3m

5. HKCC and SEOCH started to pay interest rebates to participants on HKD margin funds since 15 June 2022 when 1M HIBOR was >0.5%. The amount is estimated by multiplying average fund size of HKCC and SEOCH in Q1 by the average rebate rate of 0.12% p.a. (50% of 1M HIBOR minus 0.25%) for the period from 15 to 30 June 2022. Average 1M HIBOR for the period from 15 to 30 June was 0.74% p.a.

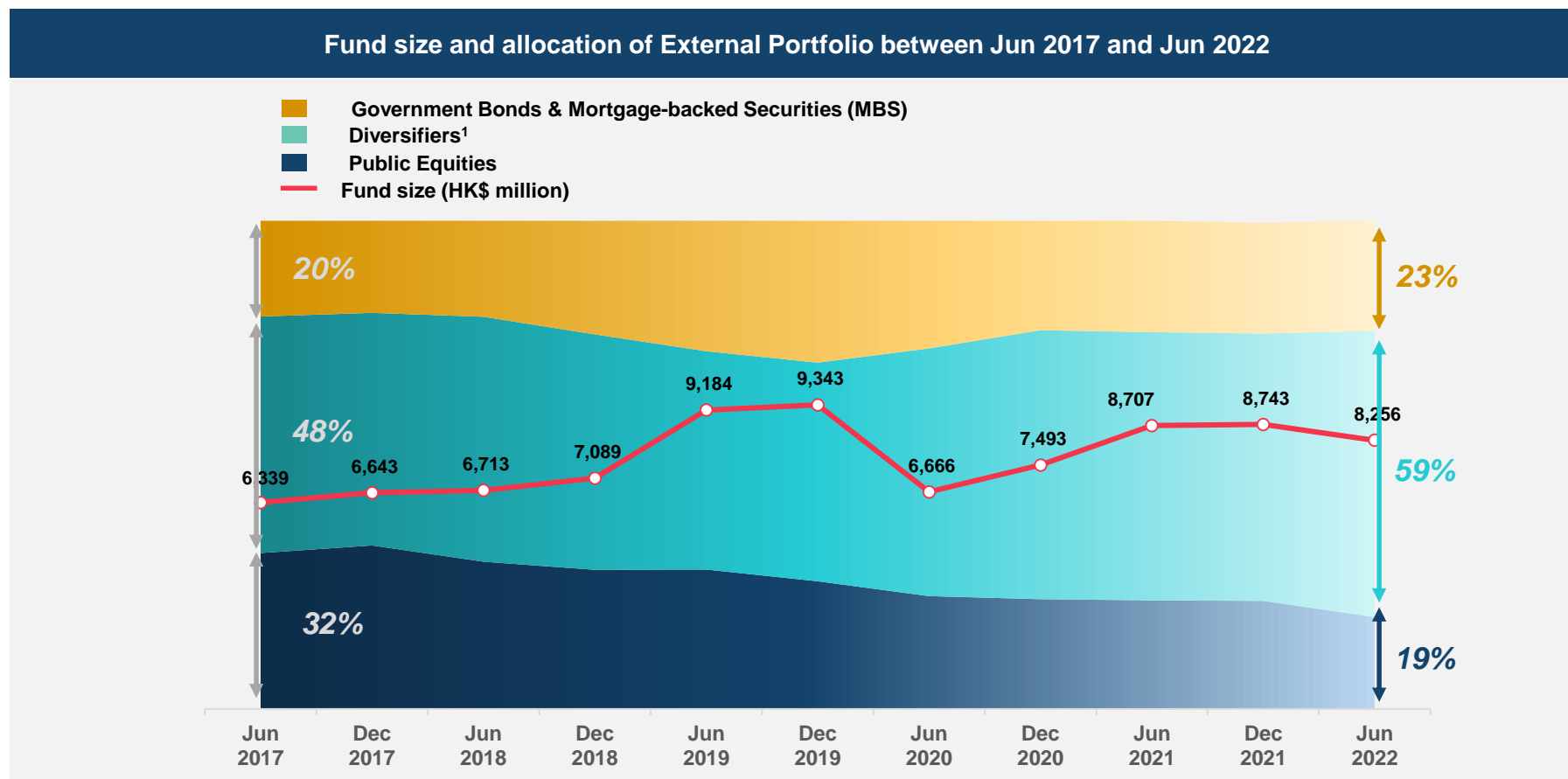
HKCC & SEOCH @ 31 Dec 2021 : 38% of Total Margin Fund size (\$78bn / \$203.5bn)

6. Net investment income from LME Margin Funds and Clearing House Funds is kept at 20bps p.a.



External Portfolio

Designed to enhance returns and mitigate portfolio volatility and asset class concentration risk



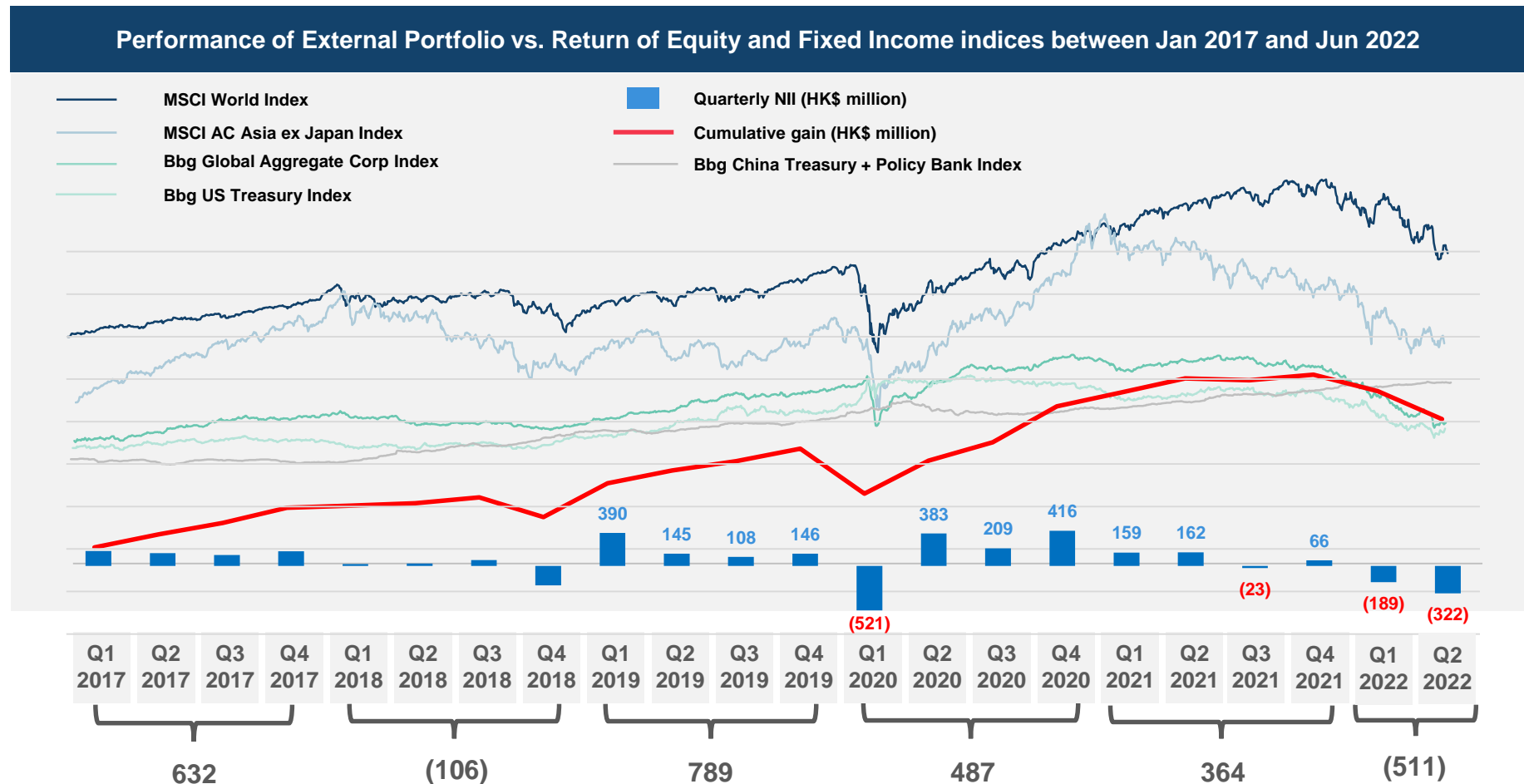
- Highly diversified with over 30 different fund managers across 3 strategies² / 4 asset classes
- Public equities allocation invested mainly in developed markets and Asian markets
- Diversifiers allocation invested in a broad range of strategies which are less correlated to broader equity markets and provides diversification to the overall portfolio
- Government Bonds and MBS allocation is to provide downside protection and liquidity during periods of declines in other asset classes such as equities



1. Diversifiers comprise Absolute Return and Multi-Sector Fixed Income asset classes
 2. The strategies are mainly invested in developed markets and Asian markets, and the allocation between the three strategies vary over time.

External Portfolio

The return of the portfolio is affected by broader markets and fund size



- Cumulative performance of the Portfolio has been largely in line with broader equity and fixed income markets



External Portfolio

Historical quarterly performance against equity and fixed income market indices

Main Components in Portfolio	Market Indices	Parameters in Regression Analysis
Public Equities	MSCI World Index & MSCI AC Asia ex Japan Index	Quarterly Change of X <i>X = average of the quarterly change in MSCI World Index and MSCI AC Asia ex Japan Index</i>
Fixed Income	Bloomberg Global Aggregate Corporate Index	Quarterly Change of Y <i>Y = average of the quarterly change in Bloomberg Global Aggregate Corporate Index</i>
Government Bonds	Bloomberg US Treasury Index & Bloomberg China Treasury + Policy Bank Bond Index	Quarterly Change of Z <i>Z = average of the quarterly change in Bloomberg US Treasury Index and Bloomberg China Treasury + Policy Bank Index</i>

Based on regression analysis, Quarterly Portfolio Return¹ (%)

$$= 0.276X + 0.061Y - 0.004Z + 0.748\%$$

Based on the regression analysis, the Portfolio has been moving broadly in line with the equity and fixed income markets. However, the actual performance will be affected by (1) actual allocation to different asset classes (e.g. the allocation in Equities, Diversifiers and Macroeconomic Hedges as a percentage of overall Portfolio) and (2) performance of the individual fund managers against broader markets.

Estimated performance for the Q2 2022 based on the above regression analysis is loss of HK\$315m, \$7m better than the actual loss of \$322m.

In 2H 2022, there will be HK\$2bn redemption to improve downside protection and reduce volatility on earnings.



1. Quarterly portfolio return is calculated by dividing quarterly investment income by the fund size at the beginning of the quarter