

# Derivatives Market Transaction Survey 2019/20



## **Contents**

2019/2020 Survey	1
1. Transaction Purposes	3
2. Trading by Investor Type	6
2.1 Overall pattern	6
3. Overseas Investor Trading by Origin	11
3.1 Overall pattern	11
4. Retail Online Trading	14
Glossarv	16

## 2019/20 Survey

The Derivatives Market Transaction Survey (DMTS) was conducted annually during the period of 1994 to 2015 (by Hong Kong Futures Exchange on its market prior to 2001) and resumed in 2019. For this current survey, the study period is from July 2019 to December 2020. This is a one-time adjustment to accommodate for the business challenges of Covid19, and going forward the survey will capture data per calendar year. The objectives of the survey are to track the trading composition by investor type and by trading purpose, as well as the market share of retail online trading in HKEX's derivatives market, which comprises predominantly financial futures and options contracts (excluding the commodity derivatives market operated by the London Metal Exchange, part of the HKEX Group).

The 2019/20 Survey covers Hang Seng Index (HSI) futures, HSI options, Mini-HSI futures, Mini-HSI options, Hang Seng China Enterprises Index or H-shares Index (HSCEI) futures<sup>1</sup>, HSCEI options, Mini-HSCEI futures, USD/CNH futures<sup>2</sup>, weekly index options (both HSI and HSCEI), MSCI Taiwan Index futures, MSCI Net Total Return (NTR) futures<sup>3</sup>, and stock options. These products together accounted for 99% of the total turnover of the HKEX derivatives market during the study period.

For analysis purposes, the contract volume for each type of trade in the survey was estimated (referred to as the "implied contract volume" based on the actual contract volume for each product and computed from the percentage share of the contract volume for that trade type as obtained from the survey. The relative contribution of each trade type to market volume was computed taking into account of the relative contribution by product type in the actual market turnover.

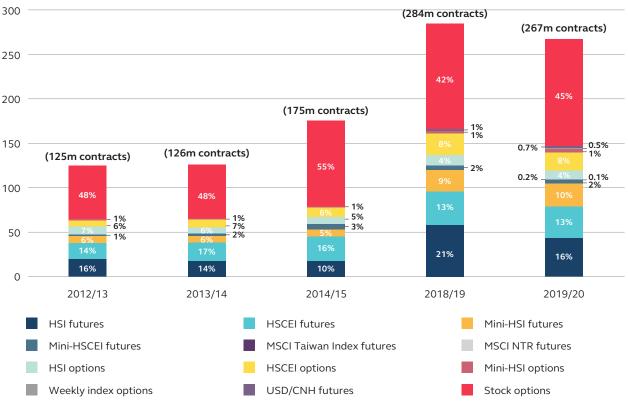
<sup>1</sup> For surveys before 2018/19, HSCEI was named as HHI (the code for related derivative products) for Hang Seng China Enterprises Index or H-shares Index.

<sup>2</sup> USD is US dollar; CNH is Renminbi (RMB) traded in Hong Kong.

Includes MSCI Australia Net Total Return (USD) Index Futures, MSCI China Free Net Total Return (USD) Index Futures, MSCI EM Asia ex China Net Total Return (USD) Index Futures, MSCI EM Asia Net Total Return (USD) Index Futures, MSCI EM Asia Net Total Return (USD) Index Futures, MSCI EM EMEA Net Total Return (USD) Index Futures, MSCI EM EMEA Net Total Return (USD) Index Futures, MSCI EM EXTERNAL RETURN (USD) Index Futures, MSCI India Net Total Return (USD) Index Futures, MSCI India Return (USD) India Retur

Figure 1. Contract volume and percentage of total by product under study (2012/13 – 2019/20)





### Survey-on-Survey % change (in contract volume)

Product under study	2012/13	2013/14	2014/15	2018/19	2019/20
HSI futures	-12	-13	1	230	-25
HSI options	-9	-22	8	59	-13
Mini-HSI futures	-25	-12	16	201	5
Mini-HSI options	-	-25	11	176	16
HSCEI futures	10	19	29	36	-7
HSCEI options	43	27	23	120	-14
Mini-HSCEI futures	-12	55	128	-25	-8
USD/CNH futures*	-	-	-	-	-15
Weekly index options*	-	-	-	-	-
MSCI Taiwan Index futures*	-	-	-	-	-
MSCI NTR futures*	-	-	-	-	-
Stock options	-12	2	58	23	1
Total product under study	-7	1	39	62	-6

### Note:

Numbers may not add up to 100% due to rounding.

Not applicable

<sup>\*</sup> USD/CNH futures (launched on 17 September 2012) were included in the survey for the first time in 2018/19. Weekly index options (launched on 16 September 2019) and MSCI Taiwan Index futures and MSCI NTR futures (launched on July - August 2020) were included in the survey for the first time this year.

## 1. Transaction Purposes

The survey assessed the composition of derivatives trading by three purposes — pure trading, hedging and arbitrage. However, EPs may not know their clients' transaction purposes and would be inclined to consider their client transactions as pure trading. As a result, the percentage share of pure trading as a transaction purpose may be over-estimated. Nevertheless, the survey results would show a reasonable indication of the market activities and the changes over time.

## Trading distribution by transaction purpose

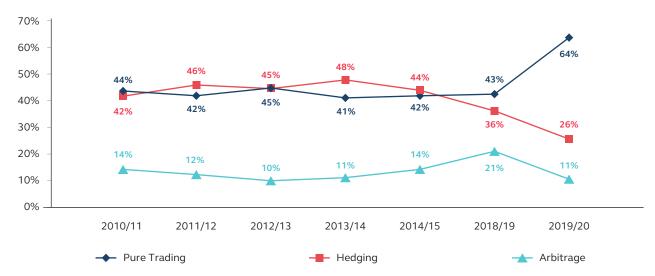
Overall, pure trading was the main transaction purpose of derivatives trading in 2019/20. The proportion of turnover for pure trading was 64% of the total derivatives market turnover (up from 43% in 2018/19). Hedging was 26% (down from 36% in 2018/19). Arbitrage turnover accounted for 11% of the overall market turnover in 2019/20, down from 21% in 2018/19.

## Implied contract volume by transaction purpose

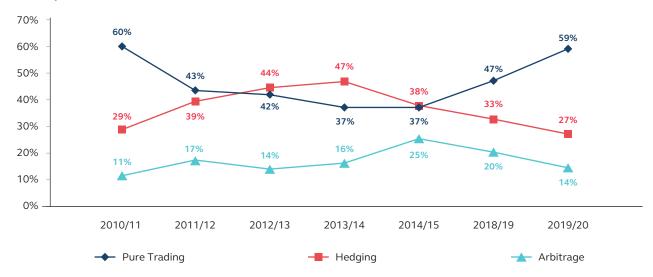
Overall derivatives market turnover dropped 6% in volume terms. Pure trading grew 41%, while hedging and arbitrage dropped 34% and 53% respectively. (See Figures 2)

Figure 2. Distribution of derivatives market trading volume by transaction purpose (2010/11 – 2019/20)

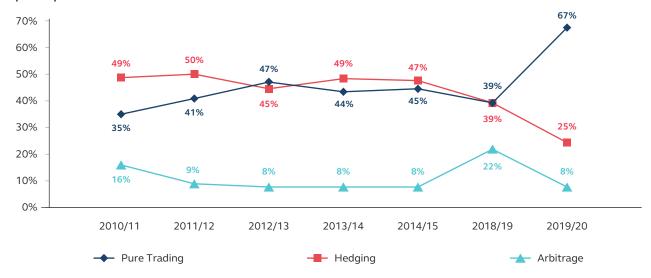
### (a) Overall market



### (b) All futures products



### (c) All options products



Note: Numbers may not add up to 100% due to rounding.

## 2. Trading by Investor Type

### 2.1 Overall pattern

(See Figures 3 to 7 and Table 1)

### Trading distribution by investor type

- In 2019/20, investor trading (i.e. agency trading of EPs) accounted for 56% of total derivatives market contract volume while EP principal trading accounted for 44% (compared to 42% in 2018/19). The percentage contribution from EP principal trading and investors trading remained steady relative to 2018/19.
- The contribution from overseas investors was 28% (26% from institutions) in 2019/20, similar to the level of 29% in 2018/19. Their cumulative market share in the past decade<sup>4</sup> was 27% (24% from institutions).
- The contribution from local investors was 28% 13% from retail (15% in 2018/19) and 15% from institutions (14% in 2018/19). Over the past decade, local investors contributed 26% of cumulative market turnover.
- The contribution from institutional investors (local and overseas) to total market turnover was up slightly to a record high of 41% in 2019/20, compared to 40% in 2018/19. Their cumulative market share in the past decade was 34%.
- The contribution from retail investors (local and overseas) was a record low of 15% in 2019/20, compared to 19% recorded in 2018/19. Their cumulative market share in the past decade was 19%.

## Implied contract volume by investor type

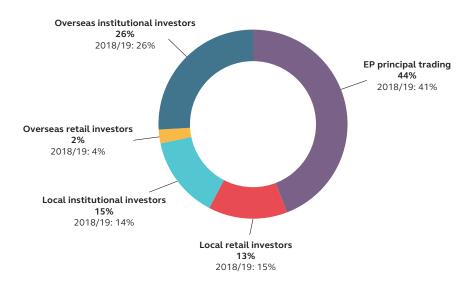
From 2018/19 to 2019/20:

- EP principal trading was unchanged from the 2018/19 volume.
- Local investor trading volume retracted 11% retail fell 20% and institutions dropped 2%.
- Overseas investor trading volume (predominantly from institutions) retracted 9% retail fell 38% and institutions dropped 6%.
- Over the past decade, the overall derivatives market trading recorded a CAGR of 9% overseas investor trading up 11%, local investor trading up 9%, and EP principal trading up 7%.

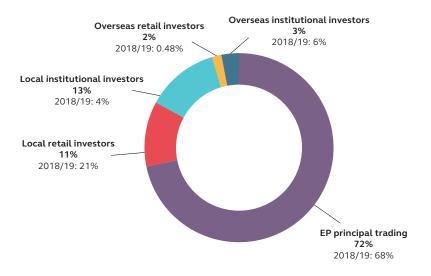
<sup>4</sup> The "past decade" refers to the survey periods from 2010/11 to 2019/20. As no survey was conducted during 2015 to 2018, the cumulative turnover volume of the market or of a specific trade type over the past decade refers to the summation of the corresponding turnover volumes of the seven survey periods in the decade.

Figure 3. Distribution of derivatives market trading volume by investor type (Jul 2019 – Dec 2020)

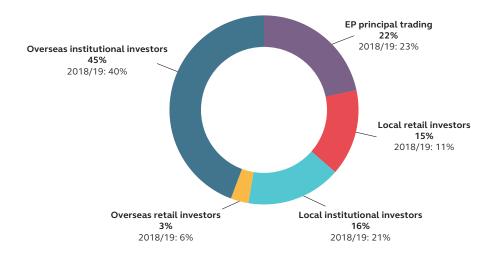
### (a) Overall market



### (b) Stock options



### (c) HKFE futures and options1



Note:

Numbers may not add up to 100% due to rounding.

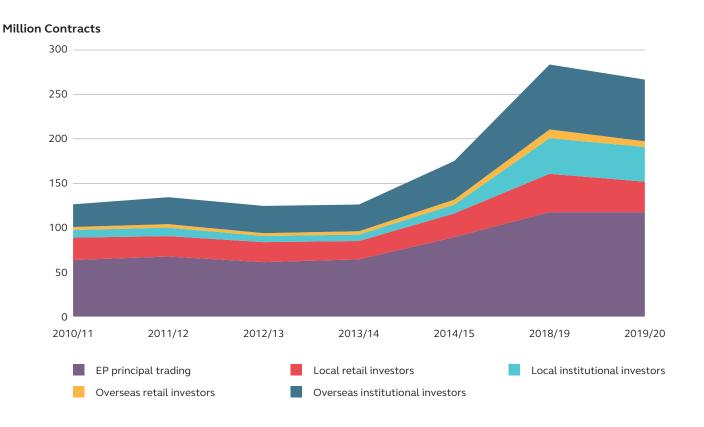
<sup>(1)</sup> HKFE Futures and Options comprise the HSI and HSCEI futures and options, USD/CNH futures, MSCI Taiwan Index futures, MSCI NTR futures and weekly index options.

Figure 4. Distribution of derivatives market trading volume by investor type (2010/11 – 2019/20)



Note

Figure 5. Implied contract volume of derivatives by investor type (2010/11 – 2019/20)



<sup>(1)</sup> The 2010/20 cumulative figures cover the seven survey periods from 2010/11 to 2014/15 and 2018/19 to 2019/20 only. No surveys were conducted for the period in between 2014/15 and 2018/19.

Numbers may not add up to 100% due to rounding.

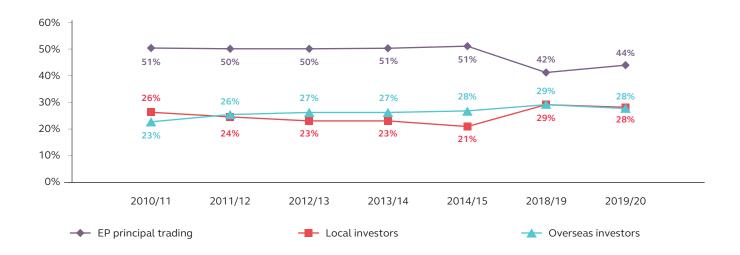
Figure 5. Implied contract volume of derivatives by investor type (2010/11 – 2019/20) (cont'd)

Annual	change	(%)*

	7 timeat change (70)							
Type of trade	2010/11	2011/12	2012/13	2013/14	2014/15	2018/19	2019/20	2010/11 - 2019/20 CAGR (%)
EP principal trading	29.52	4.66	-8.22	3.40	40.07	7.19	-0.19	6.96
Market maker	36.80	4.96	-10.98	0.00	56.71	-3.21	39.89	6.73
Proprietary trading	10.22	3.68	0.99	13.39	-3.00	33.42	-46.63	7.69
Local investor trading	31.36	-1.96	-11.81	-0.36	29.09	22.14	-11.00	9.17
Retail	27.35	-7.63	-4.37	-8.22	30.27	12.70	-19.56	3.57
Institutional	45.67	15.73	-30.33	26.50	26.18	39.56	-1.69	19.04
Overseas investor trading	18.98	19.09	-1.28	-1.06	44.72	14.39	-9.42	11.25
Retail	-8.93	32.26	-14.67	1.32	38.41	18.30	-37.61	7.61
Institutional	23.70	17.45	0.60	-1.34	45.49	13.91	-5.61	11.65
Retail investor trading	21.89	-3.14	-5.95	-6.89	31.50	13.65	-22.94	6.40
Institutional investor trading	28.35	17.04	-6.74	3.59	41.31	20.26	-4.24	17.00
Total	27.41	6.21	-7.32	1.31	38.80	12.84	-6.05	8.64

### Note:

Figure 6. Distribution of derivatives market trading volume by investor type (local vs overseas) (2010/11 – 2019/20)



Note: Numbers may not add up to 100% due to rounding.

<sup>\*</sup> Annual change refers to the year-on-year percentage change in the implied contract volume in a survey year relative to the previous survey year and refers to the CAGR during the period from 2014/15 to 2018/19 for the 2018/19 Survey.

Numbers may not add up to 100% due to rounding.

Figure 7. Distribution of derivatives market trading volume by investor type (retail vs institutional) (2010/11 – 2019/20)



Note: Numbers may not add up to 100% due to rounding.

Table 1. Business composition of Exchange Participants in derivatives by trade type (in volume terms) (%)

	Yearly overall						
	2012/13	2013/14	2014/15	2018/19	2019/20		
All trading							
EP principal <sup>#</sup>	49.5	50.5	51.0	41.5	44.1		
Agency	50.5	49.5	49.0	58.5	55.9		
	100.0	100.0	100.0	100.0	100.0		
Agency trading							
Local investors	46.0	46.1	43.3	49.8	49.4		
Overseas investors	54.0	53.9	56.7	50.2	50.6		
	100.0	100.0	100.0	100.0	100.0		
Agency trading							
Retail investors	41.3	38.7	37.0	31.9	27.4		
Institutional investors	58.7	61.3	63.0	68.1	72.6		
	100.0	100.0	100.0	100.0	100.0		
Retail investor trading							
Local	86.1	84.8	84.0	81.3	84.8		
Overseas	13.9	15.2	16.0	18.7	15.2		
	100.0	100.0	100.0	100.0	100.0		
Institutional investor trading	9						
Local	17.7	21.6	19.3	35.0	36.0		
Overseas	82.3	78.4	80.7	65.0	64.0		
	100.0	100.0	100.0	100.0	100.0		
Local investor trading							
Retail	77.4	71.3	71.9	52.1	47.1		
 Institutional	22.6	28.7	28.1	47.9	52.9		
	100.0	100.0	100.0	100.0	100.0		
Overseas investor trading							
	10.6	10.9	10.4	11.9	8.2		
Overseas investor trading  Retail  Institutional	10.6	10.9	10.4 89.6	11.9	8.2 91.8		

Note:

EP principal trading comprises market maker trading and EP proprietary trading.
 Numbers may not add up to 100% due to rounding.

## 3. Overseas Investor Trading by Origin

## 3.1 Overall pattern

(See Figures 8 to 10)

## Trading distribution by origin

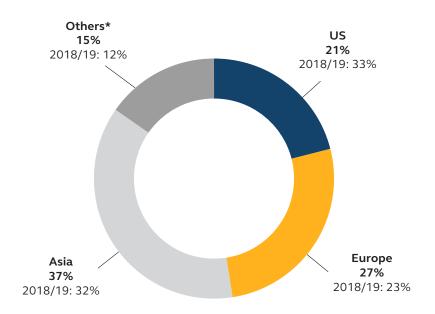
Overseas investors in aggregate contributed 28% of total market turnover in 2019/20 (compared to 29% in 2018/19) and retracted by 9% in contract volume from 2018/19 to 2019/20. It had a CAGR of 11% over the past decade.

- Asian investors overtook the US to become the largest contributor group in 2019/20 37% of overseas investors trading (up from 32% in 2018/19) or 11% of total market turnover (up from 10% in 2018/19).
- European investors contributed 27% of overseas investor trading (up from 23% in 2018/19) or 8% of total market volume (up from 7% in 2018/19).
- US investors contributed 21% of overseas investor trading in 2019/20 (down from 33% in 2018/19) or 6% of total market turnover (down from 10% in 2018/19).

### Implied contract volume by origin

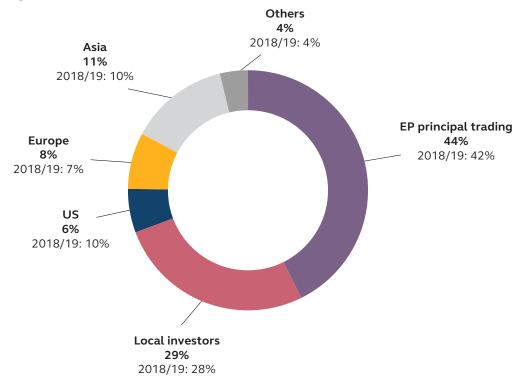
- Asian investor trading volume grew 5% from 2018/19 to 2019/20, compared to a retraction of 9% of total overseas investor trading in the same period. A CAGR of 13% was achieved in the past decade.
- European investor trading increased 5% year-on-year, and recorded a 10-year CAGR of 6%.
- US investor trading shrank 42% compared to 2018/19, and recorded a 10-year CAGR of 10%.

Figure 8. Distribution of overseas investor trading volume in derivatives by origin (Jul 2019 – Dec 2020)



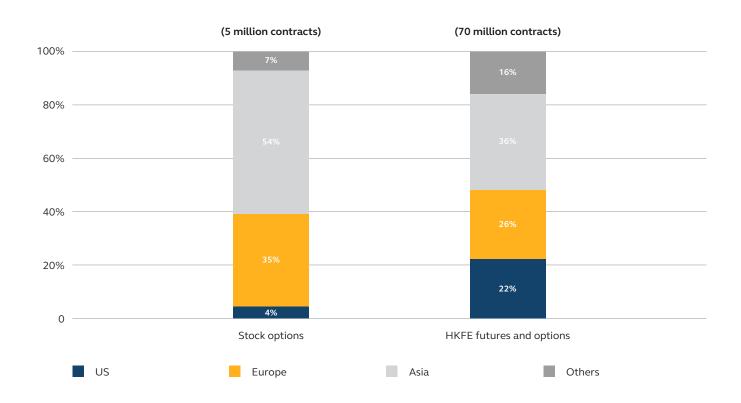
Note: Numbers may not add up to 100% due to rounding.

Figure 9. Distribution of derivatives market trading volume by local and overseas origins (Jul 2019– Dec 2020)



Note: Numbers may not add up to 100% due to rounding.

Figure 10. Distribution of overseas investor trading volume in derivatives by origin for each market segment (Jul 2019 – Dec 2020)



### Note:

Implied contract volume of overseas investor trading in the market segment. Numbers may not add up to 100% due to rounding.

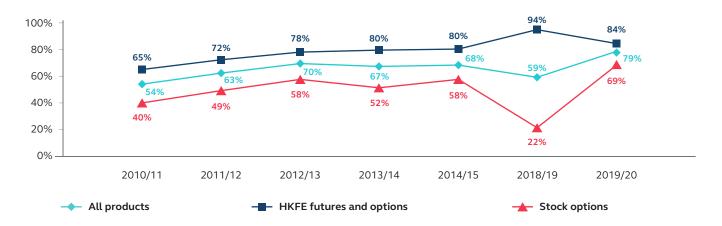
## 4. Retail Online Trading

(See Figure 11 and Table 2)

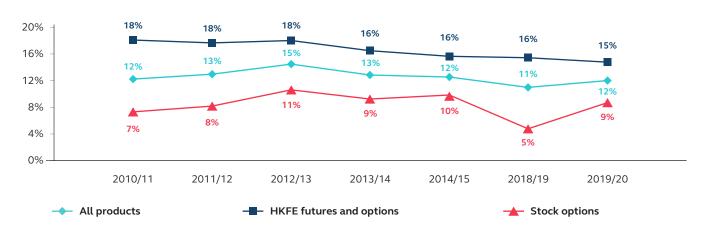
- **Retail online trading** accounted for 79% of total retail investor trading in 2019/20, up from 59% in 2018/19. Its contribution to total market turnover was 12% in 2019/20 (compared to 11% in 2018/19).
- For stock options, the use of online trading by retail investors increased to a record high of 69% in 2019/20 (up from 22% in 2018/19), or 9% of total product volume (compared to 5% in 2018/19).
- **HKFE futures and options**, the use of online trading by retail investors was 84% of total investor trading (down from 94% in 2018/19), or 15% of the products' total turnover (compared to 16% in 2018/19)
- A total of 88 EPs, representing 53% of the responding EPs (down from 103 EPs or 63% in 2018/19) offered online trading services to retail derivatives investors (referred to as "online brokers"). Retail online trading accounted for 51% of online brokers' total turnover in 2019/20 (68% for FEP online brokers and 33% for SOEP online brokers).

Figure 11. Market share of retail online trading in derivatives trading (2010/11 – 2019/20)

### (a) As % of retail derivatives turnover volume



### (b) As % of total derivatives turnover volume



Note: HKFE futures and options include the HSI and HSCEI futures and options, USD/CNH futures, MSCI Taiwan Index futures, MSCI NTR futures, and Weekly index options.

Statistics on retail online trading in derivatives Table 2. (2012/13 to 2019/20)

Product under study	2012/13	2013/14	2014/15	2018/19	2019/20
Overall market (All futures and options)					
Online brokers <sup>1</sup>					
Total number of online brokers	112	122	116	103	88
As % of all responding EPs (%)	49	53	54	63	53
Online trading					
Total implied contract volume <sup>2</sup>	18,125,661	16,266,956	21,828,087	31,378,612	32,157,182
As % of total market turnover³ (%)	14.5	12.9	12.4	11.0	12.1
As % of total agency (investor) trading (%)	28.8	26.0	25.4	18.9	21.5
As % of total retail investor trading (%)	69.6	67.1	68.5	59.0	78.5
As % of total turnover of online brokers (%)	50.9	46.9	45.3	57.3	50.8
HKFE futures and options					
Online brokers <sup>1</sup>					
Total number of online brokers	90	95	89	70	67
As % of all responding EPs (%)	59	63	64	65	60
Online trading					
Total implied contract volume <sup>2</sup>	11,761,364	10,705,055	12,378,137	25,686,120	21,743,221
As % of total product turnover4 (%)	18.0	16.3	15.6	15.5	14.8
As % of total agency (investor) trading (%)	26.1	23.8	21.4	20.1	18.8
As % of total retail investor trading (%)	78.5	79.6	79.8	94.2	84.1
As % of total turnover of online brokers (%)	72.1	67.9	70.5	62.4	67.7
Stock options					
Online brokers <sup>1</sup>					
Total number of online brokers	22	27	27	33	21
As % of all responding EPs (%)	29	35	36	60	39
Online trading					
Total implied contract volume <sup>2</sup>	6,364,296	5,561,901	9,449,950	5,692,492	10,413,961
As % of total product turnover4 (%)	10.7	9.1	9.8	4.8	8.7
As % of total agency (investor) trading (%)	35.4	31.6	33.7	14.8	30.8
As % of total retail investor trading (%)	57.6	51.5	57.7	22.0	68.9
As % of total turnover of online brokers (%)	33.2	29.5	30.9	42.1	33.3

Note:
(1) "Online brokers" refers to EPs offering online trading service to retail clients.
(2) The implied contract volume of online trading is calculated by multiplying the percentage share of online trading in the responded sample for that product segment by the total product turnover volume in the market. The implied contract volume of online trading in the overall market is calculated by adding the implied contract volume of online trading for HKFE futures and options and that for stock options.
(3) Market turnover refers to the total turnover in number of contracts of products under study in the respective year's survey, which contributed in aggregate 99% or more of the total turnover of all products in the respective survey periods.
(4) Product turnover refers to the total turnover in number of contracts of the products under study for the product segment in the table.

## Glossary

## Hedging

Utilisation of futures/options to reduce or eliminate the market risk of a portfolio by compensating for the effect of price fluctuations of an underlying asset.

## Pure trading

Trading for potential profit in anticipation of a price movement in either the short or long term, but not for hedging or arbitrage purpose.

## Arbitrage

Trading to take riskless or near riskless profit from price differentials in related markets.

## EP principal trading

Trading on the participant firm's own account, whether as a market maker or not, i.e. comprising EP market maker trading and proprietary trading.

## Agency trading

Trading on behalf of the participant firm's clients, including client trading channelled from the firm's parent or sister companies.

## Market maker trading

Trading as a market maker serving for that product only, including trading by client Registered Traders (RTs) (before 1 February 2007) or corporate entities which have market making arrangement with the EP that has been granted market maker permit in the product (on and after 1 February 2007). Trading in that product using the EP's RT accounts or market making accounts for other products is excluded.

## EP proprietary trading

Trading on the participant firm's own account but not as a market maker.

### Individual/Retail investors

Investors who trade on their personal account.

### Institutional investors

Investors who are not individual/retail investors.

### Local investors

Individual/Retail investors residing in Hong Kong or institutional investors operating in Hong Kong — Hong Kong as the source of funds.

### Online brokers

EPs who offer online derivatives trading service to individual/retail investors.

### Overseas investors

Individual/Retail investors residing outside Hong Kong or institutional investors operating outside Hong Kong — overseas as the source of funds.

## Retail online trading

Trading originating from orders entered directly by individual/retail investors and channelled to the brokers via electronic media (e.g. the Internet).

## Implied contract volume

The number of contracts traded by a particular investor type in a particular product type (or the overall market) is calculated by multiplying the percentage contribution of that type of trade to the product turnover (or the market turnover) as obtained from the survey by the actual turnover (number of contracts traded) of that product (or the aggregate turnover of all products under study) during the study period.

### Notional value

The notional value of a derivatives contract is calculated by multiplying the market price of the underlying asset with the contract multiplier (i.e. the dollar amount per index point for index futures and options) or contract size (the number of underlying shares per contract for stock options). The notional value of the turnover in derivatives is the aggregated notional value of the contracts traded.

## **Appendix 1. Survey Methodology**

### (1) Methodology

- The survey consisted of two sub-surveys with two separate questionnaires, targeting the FEPs and the SOEPs respectively. The questionnaire addressed to SOEPs covered stock options only and that to FEPs covered major derivative products other than stock options (i.e. key index futures and options, as well as RMB currency futures USD/CNH futures; these are referred to as the "HKFE futures and options").
- The study period or survey period is from July 2019 to December 2020. The results have been annualised and scaled down from 18-months figures in order to be comparable to past survey results (Total Turnover Volume ÷ 18 months x 12 months). Weekly Index Options, introduced in September 2019, was annualised and scaled down from 16 months (Total Turnover Volume ÷ 16 months x 12 months). MSCI Taiwan Index Futures and MSCI NTR Index Futures figures were not annualised as they were launched in July August 2020.
- Products under study were Hang Seng Index (HSI) futures, HSI options, Mini-HSI futures, Mini-HSI options, H-shares Index (HSCEI) futures, HSCEI options, Mini-HSCEI futures, USD/CNH futures, MSCI Taiwan futures, MSCI NTR futures, weekly index options (HSCEI and HSI) and stock options. These products together contributed 99% of the total volume of the HKEX derivatives market during the study period.

### (2) Limitations

- In providing the breakdown of total contract volume by the type of trade, EPs might only provide their best estimates instead of hard data. Reliability of results is subject to the closeness of their estimates to the actual figures.
- For agency trading, EPs usually would not know the purpose of trading and would tend to regard such transactions as "pure trading".
- EPs might not know the true origins of all their client orders. For instance, an EP might classify transactions for a local institution as such when in fact the orders originated from overseas and were placed through that local institution, or vice versa. As a result, the findings may deviate from the true picture.
- The number of derivatives EPs was relatively small, especially SOEPs. Their degree of participation in the various derivative products varied greatly. The trading pattern of the various derivative products was also very diverse. Therefore, the non-response of particular EPs would reduce the reliability of the survey findings, especially for a particular trade type or a particular product type or Participant type with a small base. Nevertheless, the error due to non-response should be limited because of the high response rate by turnover volume and the responded sample's relatively high representativeness of the target population (see Appendix 1 and 2).
- The estimate of online trading volume in the market is subject to limitations. Firstly, online trading through banks may or may not be reflected in the responses depending on the system connection between the responding EP and the bank through which client orders are routed and the EP's own judgement. Secondly, the offer of online trading by EPs may not have an even distribution within the two target groups of FEPs and SOEPs so that non-responses would generate sampling error even though weighting by target group has been applied. Nevertheless, the second limitation is considered minimal given the high response rate in volume terms.
- There are two sets of statistics on FEPs' contract volume execution statistics, which record
  volume when the trades are executed, and registration statistics, which are adjusted for
  post-trades. The total contract volume for a FEP and the proportion as market making under
  execution statistics may differ from that under registration statistics. Execution statistics were
  used for the survey.

### **Contact information**

Sales and Marketing Department, Markets Hong Kong Exchanges and Clearing Limited Email: marketing@hkex.com.hk

### Disclaimer

The information contained in this document is for general informational purposes only and does not constitute an offer, solicitation, invitation or recommendation to buy or sell any securities, futures and options contracts or other products or to provide any investment advice or service of any kind. This document is not directed at, and is not intended for distribution to or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to law or regulation or which would subject Hong Kong Exchanges and Clearing Limited, The Stock Exchange of Hong Kong Limited ("SEHK"), Hong Kong Futures Exchange Limited ("HKFE") (together, the "Entities", each an "Entity"), or any of their affiliates, or any of the companies that they operate, to any registration requirement within such jurisdiction or country.

No section or clause in this document may be regarded as creating any obligation on the part of any of the Entities. Rights and obligations with regard to the trading, clearing and settlement of any securities or futures and options contracts effected on SEHK or HKFE shall depend solely on the applicable rules of SEHK and HKFE and the relevant clearing house, as well as the applicable laws, rules and regulations of Hong Kong.

Although the information contained in this document is obtained or compiled from sources believed to be reliable, neither of the Entities guarantees the accuracy, validity, timeliness or completeness of the information or data for any particular purpose, and the Entities and the companies that they operate shall not accept any responsibility for, or be liable for, errors, omissions or other inaccuracies in the information or for the consequences thereof. The information set out in this document is provided on an "as is" and "as available" basis and may be amended or changed. It is not a substitute for professional advice which takes account of your specific circumstances and nothing in this document constitutes legal advice. Neither of the Entities shall be responsible or liable for any loss or damage, directly or indirectly, arising from the use of or reliance upon any information provided in this document.

# 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