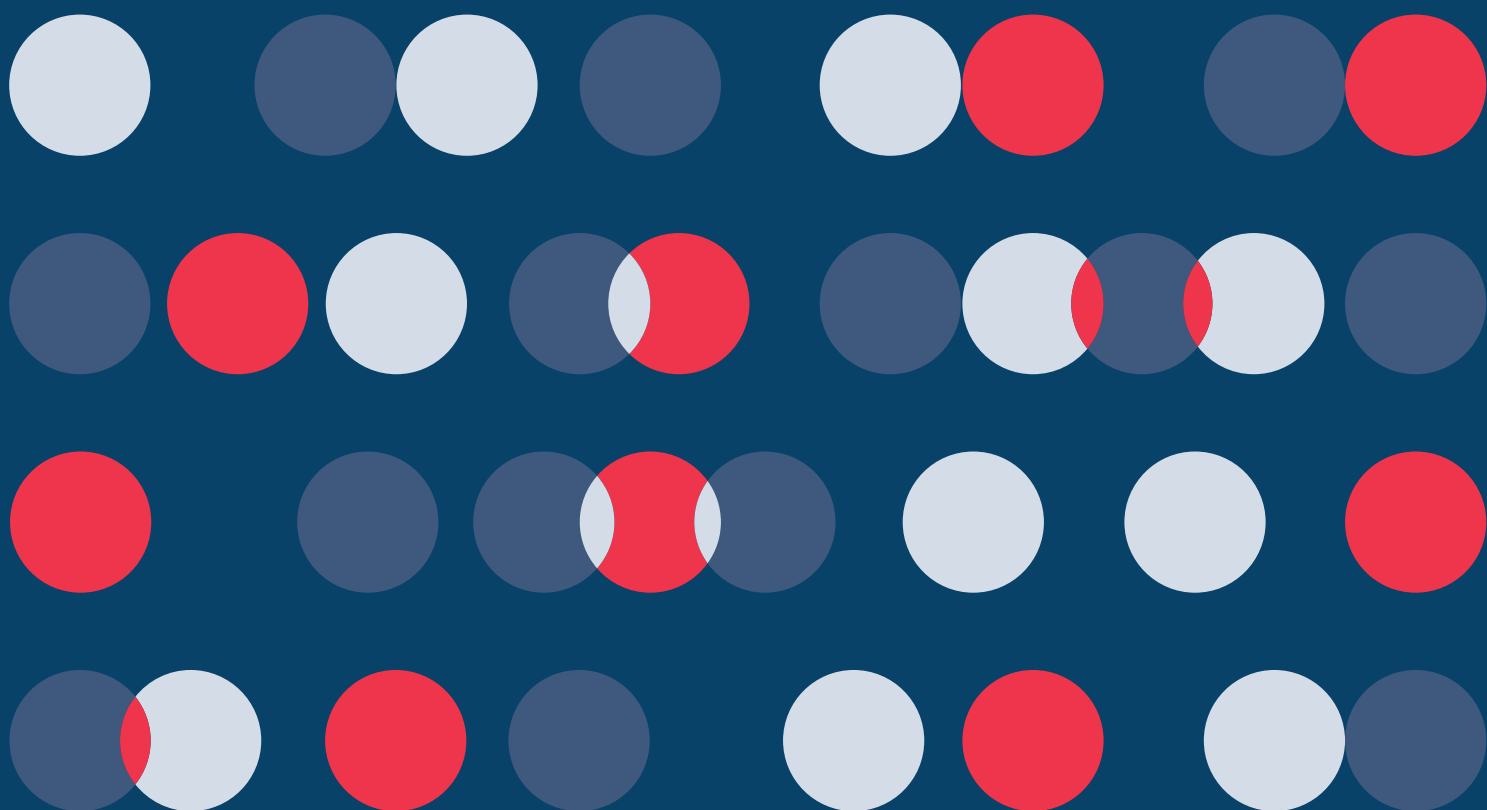


March 2020

DERIVATIVES MARKET  
TRANSACTION SURVEY 2018/19



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## EXECUTIVE SUMMARY

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 the study period of July 2018 to June 2019 (referred to as 2018/19). The objectives 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 2018/19 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>, and stock options. These products together accounted for 99% of the total turnover of the HKEX derivatives market during the study period. The respondents contributed 95% of the total turnover in the products under study during the study period.

The market turnover volume<sup>3</sup> in 2018/19 increased by 62% over the previous survey period of 2014/15<sup>4</sup>, owing largely to the increase in trading volume of the HSI products despite a drop in the trading volume of stock options. The contribution of stock options was 42% of the total market volume, albeit only 2% in notional value terms.

The key findings of the trading composition of the overall market and by product segment are summarised below.

### **Trading by transaction purpose (see Section 2)**

- (1) Pure trading and hedging were the two main transaction purposes of derivatives trading in 2018/19 (43% and 36% of the total market turnover volume respectively). Arbitrage turnover accounted for 21% in 2018/19, and recorded a compound annual growth rate (CAGR) of 25% in implied contract volume during the period from 2014/15 to 2018/19, higher than that for pure trading (13%) and hedging (8%).
- (2) Pure trading accounted for the majority of trading in index futures and options (45%) and USD/CNH futures (59%) in 2018/19. For stock options, pure trading and hedging contributed similar shares of the product's volume (around 39%) and trading for arbitrage purpose contributed 23%.
- (3) Pure trading contributed the most (47%) and arbitrage contributed the least (20%) for all futures products in aggregate. For all options products in aggregate, pure trading and hedging had almost equal shares (around 39%).

### **Trading by investor type (see Section 3)**

- (4) In 2018/19, agency (investor) trading contributed the majority of HKEX's derivatives market turnover (59%), along with a corresponding decrease in the contribution from Exchange Participants' (EP) principal trading (mainly market maker trading). This differed from the trading pattern observed since 2009/10 that the market turnover was almost equally shared by EP principal trading and investor trading. Among investor groups, overseas institutional investors had the biggest market share (26%), followed by local retail investors (15%) and local institutional investors (14%). Overseas retail investors had a relatively small contribution (4%).

<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.

<sup>3</sup> In this survey series, the market turnover volume refers to the total turnover of products under study.

<sup>4</sup> The study period of each of the surveys presented in this report is the period from July of a year to June of the following year.

- (5) Overseas investors (predominantly institutional) were the dominant contributors to trading in index futures (52%) and USD/CNH futures (57%) in 2018/19. Notably the trading volume from overseas institutional investors in mini-sized index futures kept growing over the survey periods in the past decade. EP principal trading remained dominant in the trading of options products but its contribution to the trading of index futures was the lowest recorded in the past decade.
- (6) Over the past decade, overall derivatives market trading recorded a CAGR of 12% — 15% for overseas investor trading, 14% for local investor trading and 10% for EP principal trading.

#### **Trading by overseas investors by origin (see Section 4)**

- (7) In 2018/19, among overseas investors, US investors remained the largest contributor group (33% of total overseas investor trading and 10% of total market volume). Asian investors contributed 32% of total overseas investor trading and 10% of total market turnover. European investors contributed 23% of total overseas investor trading and 7% of total market turnover.
- (8) For HKFE futures and options<sup>5</sup>, the major overseas contributor groups in 2018/19 was the US investors (35% of the products' total overseas investor trading in aggregate). In the past decade, the total overseas investor trading volume of the products in aggregate recorded a CAGR of 15%.
- (9) For stock options, the major overseas contributor group was European investors (48% of the products' total overseas investor trading in aggregate). In the past decade, a CAGR of 8% in stock options' total overseas investor trading volume was recorded.

#### **Trading pattern by product (see Sections 2 to 4)**

- (10) Overseas institutional investors' contribution to the trading volumes in HSI futures and HSCEI futures dropped in 2018/19 compared to their 2014/15 levels, while their contribution in 2018/19 to the trading volumes of Mini-HSI futures and Mini-HSCEI futures recorded the highest level in the past decade. Along with this, the proportion of trading for arbitrage in each of the index futures products dropped from their respective levels in 2014/15.
- (11) For mini-sized HSI and HSCEI futures, which are designed for general retail investors, overseas institutional investors were the largest contributor group, albeit local retail investors' contribution remained significant.
- (12) For USD/CNH futures, which was newly included in the survey in 2018/19, overseas investors (mostly institutions) were the major contributor group. The contribution from local institutional investors was also significant. The largest trading proportion was for pure trading purposes.
- (13) For Mini-HSI options and HSI options, market maker trading contributed the most (59% and 42% of the respective product volumes), while local investors also had significant contributions, mainly from local retail investors (33% and 19% of the respective product volumes). Trading from overseas institutional investors for HSI options climbed to 20% from 12% in 2014/2015. Trading in HSI options was mainly for hedging (40%) while trading in Mini-HSI options was more or less equally shared among hedging, pure trading and arbitrage.
- (14) For HSCEI options, EP principal trading remained the major contributor (40% of the product volume — 23% from market making and 17% from proprietary trading), while local institutional investors increased their contribution to 29% from 12% in 2014/15. Trading in HSCEI options was mainly for pure trading (46%) and hedging (43%) purposes.

<sup>5</sup> "HKFE futures and options" include index futures & options and USD/CNH futures in 2018/19 Survey.

- (15) For stock options, EP principal trading remained dominant, contributing 68% of the product volume in 2018/19, mainly from market maker trading (43%, though dropped from 66% in 2014/15). Local retail investors' contribution reached the highest record level of 21% of the product volume. Trading for hedging purposes and pure trading were similarly significant (39% for each), while the contribution from trading for arbitrage rose significantly from 8% in 2014/15 to 23% in 2018/19.

**Retail online trading (see Section 5)**

- (16) Retail online trading as a proportion of total retail investor trading was 59% in 2018/19, compared to 68% in 2014/15. Its contribution to total market turnover was 11% in 2018/19 (compared to 12% in 2014/15).

## 1. INTRODUCTION

The Derivatives Market Transaction Survey (DMTS) was conducted annually during the period of 1994 to 2015 (by Hong Kong Futures Exchange (HKFE) on its market prior to 2001) and resumed in 2019. The main objective of the survey is to track trading composition by investor type and by trading purpose in HKEX's derivatives market which predominantly comprises financial futures and options contracts (excluding the commodity derivatives market operated by the London Metal Exchange, part of the HKEX Group).

The survey provides key information on the relative contribution to the overall market turnover volume and to each major product by the main investor types — local and overseas, retail and institutional, and Exchange Participants' (EPs') own trading (see Appendix 4 on the classification of trade types). Retail online trading statistics in the overall derivatives market have been obtained since the 2001/02 Survey. The findings are compared with those of the past surveys to reveal any changes in trading pattern.

An online survey tool was adopted in the 2018/19 Survey. All Futures EPs (FEPs) and Stock Options EPs (SOEPs) in the target population<sup>6</sup> were invited to complete the survey questionnaire online, or to complete the questionnaire offline (a PDF version of the questionnaire was provided on request) and submit the electronic copy of the completed questionnaire by email. Out of the 268 invited EPs, 163 completed and returned the questionnaires, representing an overall response rate of 61%. The responded sample represented 95% by total contract volume of the target population in the products under study. (See Appendix 1.)

The survey covers transactions during July 2018 to June 2019<sup>7</sup> in the major HKEX futures and options products, namely 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 and stock options. These together contributed 99% of the total turnover volume of the HKEX derivatives market during the study period. "Market turnover" (or "market volume") in this report refers to the total contract volume of the products under study.

Other derivative products which individually contributed less than 0.5% of HKEX's total derivatives turnover during the same period were excluded from the survey.

In 2018/19, market turnover (products under study only) was 284 million contracts, up 62% from 175 million contracts in 2014/15 or a compound annual growth rate (CAGR) of 13% during the period from 2014/15 to 2018/19. The increase in market turnover mainly reflected a CAGR of 30% in the aggregate turnover volume of HSI products (HSI futures: +35%, HSI options: +12%, Mini-HSI futures: +32% and Mini-HSI options: +29%) and a CAGR of 10% in the aggregate turnover volume of HSCEI products (HSCEI futures: +8%, HSCEI options: +22%, despite a negative CAGR of -7% Mini-HSCEI futures). With a CAGR of 5%, the contribution of stock options to total derivatives market turnover remains the largest among all products — 42%, albeit a significant drop from 55% in 2014/15. (See Figure 1.)

Despite its major share of market turnover volume, stock options contracts in aggregate contributed only 2% by notional trading value during the study period (see Appendix 3). In view of this, detailed breakdowns by stock options, index futures and options and currency futures are provided to assist in more detailed interpretation of the findings.

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

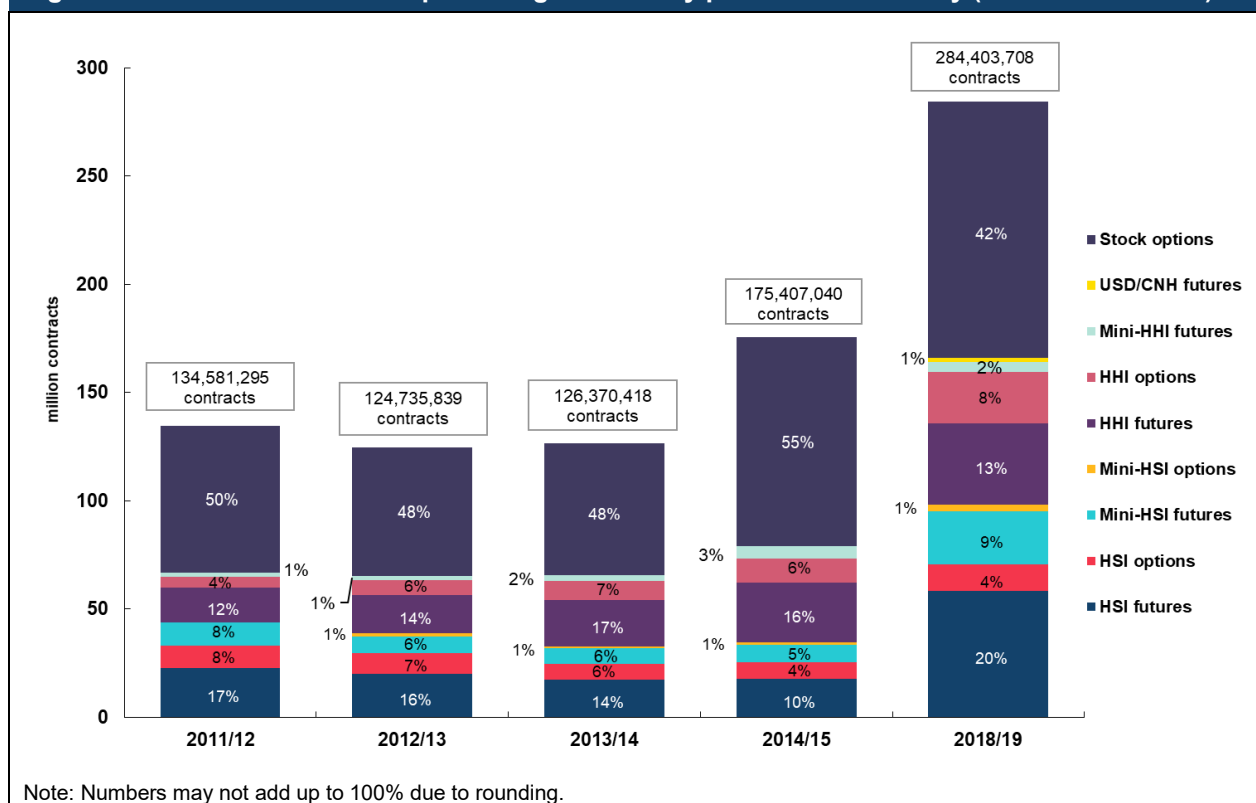
<sup>6</sup> The target population consists of all the EPs which conducted trading business during the study period excluding those that ceased their operations before the start of the fieldwork. (See Appendix 4 for survey methodology.)

<sup>7</sup> Referred to as the year 2018/19 throughout the report; the same convention is used for the past surveys.

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 (see Appendix 4 for the methodology).

Sections 2 to 5 describe the findings in detail. The findings are subject to the limitations set out in Appendix 4.

**Figure 1. Contract volume and percentage of total by product under study (2011/12 – 2018/19)**



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

Product under study	Survey-on-Survey % change (in contract volume)				
	2011/12	2012/13	2013/14	2014/15	2018/19
HSI futures	6%	-12%	-13%	1%	230%
HSI options	2%	-9%	-22%	8%	59%
Mini-HSI futures	25%	-25%	-12%	16%	201%
Mini-HSI options*	n.a.	n.a.	-25%	11%	176%
HHI futures	27%	10%	19%	29%	36%
HHI options	42%	43%	27%	23%	120%
Mini-HHI futures	47%	-12%	55%	128%	-25%
USD/CNH futures*	n.a.	n.a.	n.a.	n.a.	n.a.
Stock options	-2%	-12%	2%	58%	23%
<b>Total product under study</b>	<b>6%</b>	<b>-7%</b>	<b>1%</b>	<b>39%</b>	<b>62%</b>

n.a.: Not applicable in the study

\* Mini-HSI options (launched on 18 November 2002) and USD/CNH futures (launched on 17 September 2012) were included in the survey for the first time in 2012/13 and 2018/19 respectively. These products were omitted in the previous surveys due to their negligible contribution to the total market contract volume.

\* HHI futures, HHI options and Mini-HHI futures shown in all the figures and tables in this report refer to HSCEI futures, HSCEI options and Mini-HSCEI futures respectively in the survey findings.

## 2. 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 incline 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** and **hedging** were the two main transaction purposes of derivatives trading in 2018/19. The proportion of turnover for pure trading was 43% of the total derivatives market turnover (similar level as the 42% in 2014/15) and that of hedging was 36% (down from 44% in 2014/15). **Arbitrage** turnover accounted for 21% of the overall market turnover in 2018/19, up from 14% in 2014/15.
- In 2018/19, **pure trading** was the main transaction purpose of trading in mini-sized futures — 54% for both Mini-HSI futures and Mini-HSCEI futures, for USD/CNH futures (59%) and for HSCEI options (46%). For mini-HSI options and stock options, pure trading and trading for hedging purpose had similar shares — 33%-34% for mini-HSI options and 39% for stock options. Pure trading accounted for 45% of the total trading volume in index futures and options as a whole.
- **Hedging** accounted for the majority of trading in HSCEI futures (43%, similar to the level in 2014/15) and HSI options (40%, down from 45% in 2014/15). In 2018/19, a significant decrease in the proportion of HSCEI options trading for hedging purpose was observed (from 61% in 2014/15 to 43% in 2018/19).
- In 2018/19, the proportion of trading for **arbitrage** in each of the index futures products dropped from their respective levels in 2014/15 — Mini-HSI futures (from 29% to 24%), Mini-HSCEI futures (from 28% to 20%), HSI futures (from 25% to 20%) and HSCEI futures (from 23% to 18%). For futures as a whole, the proportion of trading for pure trading rose to the highest level recorded since 2011/12 (47%) while that of hedging was down to the low level of 33% from its recorded peak (47%) in 2013/14. For options products, the proportion of arbitrage increased massively in each of the products in 2018/19 — Mini-HSI options (from 13% to 33%), HSI options (from 12% to 30%), stock options (from 8% to 23%) and HSCEI options (from 8% to 11%). An increase in trading for arbitrage purpose from 8% in 2014/15 to 22% in 2018/19 for all options products in aggregate was observed.

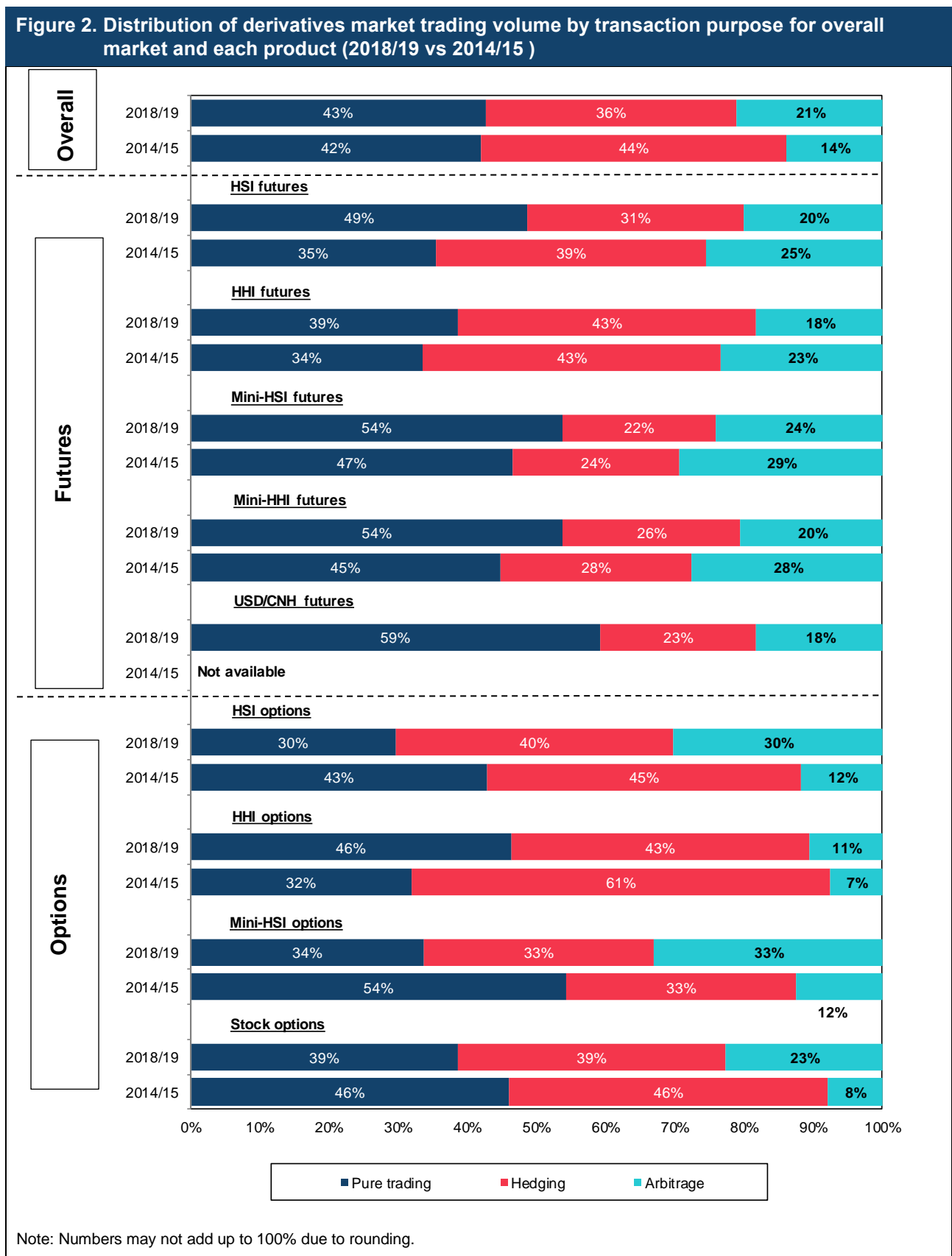
### Implied contract volume by transaction purpose

- Overall market turnover in volume terms for each transaction purpose had positive growth in 2018/19 relative to 2014/15, in particular for arbitrage (which recorded a CAGR of 25% during the period, compared to the 13% in overall derivatives trading). In fact, a positive CAGR in the contract volume for arbitrage was observed during the period for each of the products under study except Mini-HSCEI futures (-14%) — Mini-HSI options (+65%), HSI options (+42%), stock options (+37%), HSCEI options (+33%), HSI futures (+27%), Mini-HSI futures (+25%) and HSCEI futures (+2%).
- A CAGR of 13% in total market turnover for pure trading during the period from 2014/15 to 2018/19 mainly reflected the CAGR of 28% in all futures products' pure trading (compared to the CAGR of 21% in all futures products' total volume). All options products, on the other hand, recorded a strong CAGR of 38% in trading for arbitrage (compared to 8% for all option products' total volume).
- The CAGR in total market trading volume for hedging during the period from 2014/15 to 2018/19 was lower than that in total market trading volume (8% vs 13%), and the same was



observed respectively for all futures products in aggregate and all options products in aggregate.

(See Figures 2 to 3 and Table 1.)



**Figure 3. Distribution of derivatives market trading volume by transaction purpose (2009/10 – 2018/19)**

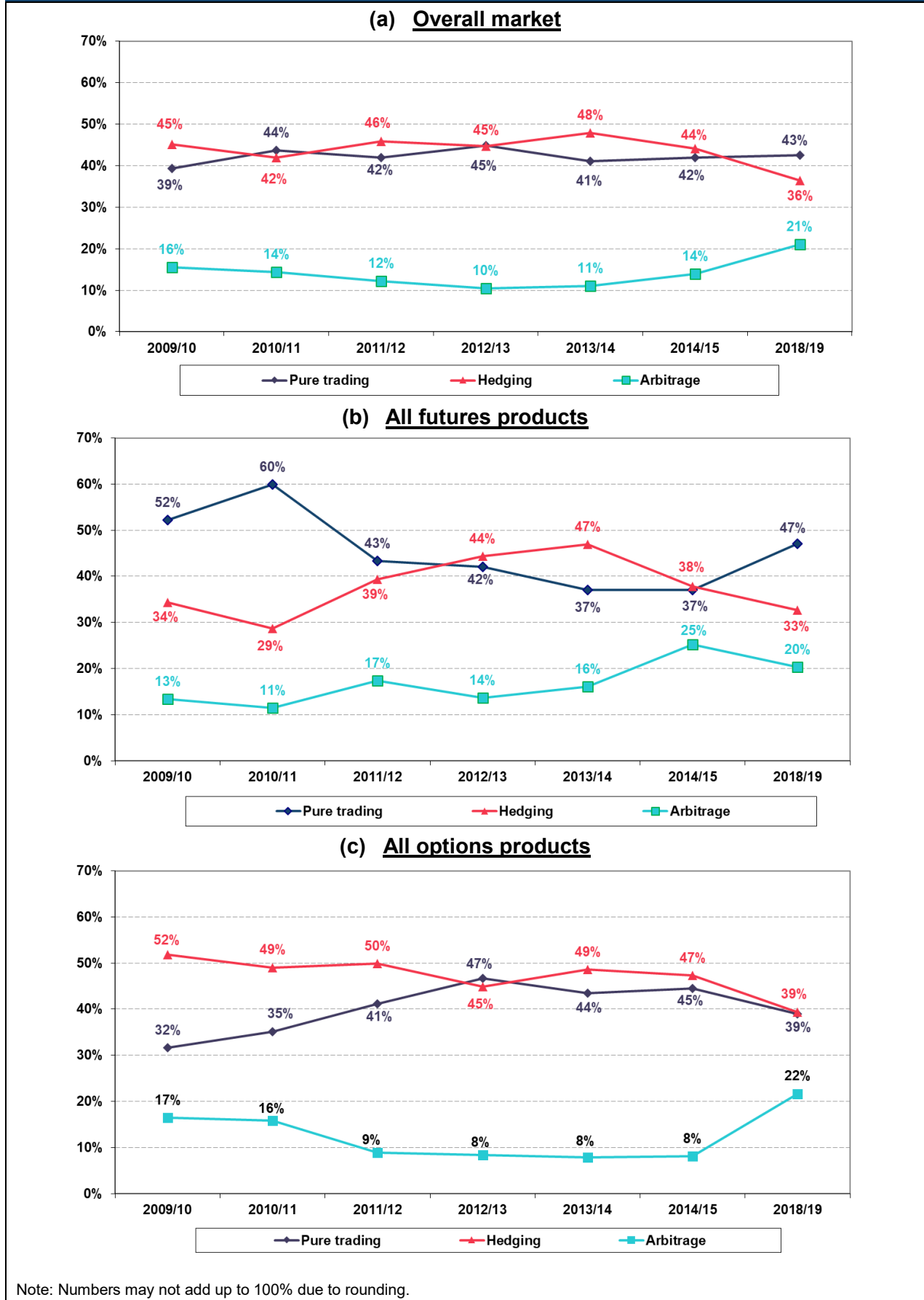


Table 1. Distribution of derivatives market trading volume by transaction purpose for overall market and each product (2011/12 – 2018/19)								
Product	Purpose	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup> 2018/19	
		2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15-2018/19)
HSI futures	Pure trading	44.2	45.6	40.4	35.4	48.7	28,350,820	46.0%
	Hedging	38.4	40.5	43.6	39.1	31.2	18,172,728	27.4%
	Arbitrage	17.5	13.9	16.1	25.4	20.1	11,674,620	27.0%
	Total	100.0	100.0	100.0	100.0	100.0	58,198,168	34.8%
HHI futures	Pure trading	32.3	30.6	29.2	33.6	38.6	14,503,548	11.9%
	Hedging	48.5	53.3	53.2	43.1	43.2	16,219,203	8.1%
	Arbitrage	19.2	16.0	17.6	23.3	18.2	6,842,538	1.6%
	Total	100.0	100.0	100.0	100.0	100.0	37,565,289	8.0%
Mini-HSI futures	Pure trading	57.8	55.7	48.5	46.5	53.7	13,177,645	36.6%
	Hedging	27.5	34.5	38.5	24.1	22.2	5,438,217	29.0%
	Arbitrage	14.7	9.8	12.9	29.4	24.1	5,909,798	25.3%
	Total	100.0	100.0	100.0	100.0	100.0	24,525,660	31.7%
Mini-HHI futures	Pure trading	46.9	55.3	47.5	44.7	53.8	2,430,744	-2.5%
	Hedging	38.5	40.6	39.2	27.7	25.7	1,161,506	-8.6%
	Arbitrage	14.6	4.0	13.3	27.5	20.5	924,284	-13.5%
	Total	100.0	100.0	100.0	100.0	100.0	4,516,534	-6.9%
HSI options	Pure trading	41.1	53.6	53.1	42.8	29.6	3,687,262	2.4%
	Hedging	46.9	35.6	35.4	45.4	40.1	4,993,225	8.9%
	Arbitrage	12.0	10.8	11.6	11.8	30.2	3,763,129	42.2%
	Total	100.0	100.0	100.0	100.0	100.0	12,443,617	12.3%
HHI options	Pure trading	23.7	30.5	30.7	31.9	46.3	11,030,295	33.6%
	Hedging	68.4	60.9	59.7	60.6	43.1	10,273,654	11.8%
	Arbitrage	7.9	8.5	9.6	7.5	10.6	2,524,708	32.8%
	Total	100.0	100.0	100.0	100.0	100.0	23,828,657	21.7%
Mini-HSI options	Pure trading	n.a.	73.2	70.7	54.3	33.7	999,399	14.4%
	Hedging	n.a.	24.7	26.3	33.2	33.2	982,662	28.8%
	Arbitrage	n.a.	2.1	3.1	12.5	33.1	980,509	64.5%
	Total	n.a.	100.0	100.0	100.0	100.0	2,962,570	28.9%
Index futures & options	Pure trading	41.6	43.1	38.4	37.1	45.4	74,179,713	26.1%
	Hedging	42.6	44.5	47.0	41.6	34.7	57,241,197	14.8%
	Arbitrage	15.8	12.5	14.6	21.3	19.9	32,619,585	18.0%
	Total	100.0	100.0	100.0	100.0	100.0	164,040,495	20.0%
USD/CNH futures <sup>(3)</sup>	Pure trading	—	n.a.	n.a.	n.a.	59.2	1,237,252	n.a.
	Hedging	—	n.a.	n.a.	n.a.	22.7	474,289	n.a.
	Arbitrage	—	n.a.	n.a.	n.a.	18.2	380,178	n.a.
	Total	n.a.	n.a.	n.a.	n.a.	100.0	2,091,718	n.a.
Stock options	Pure trading	42.4	46.9	43.8	46.0	38.6	45,681,195	0.8%
	Hedging	49.1	44.9	48.9	46.1	38.7	45,721,217	0.7%
	Arbitrage	8.6	8.2	7.3	7.9	22.7	26,869,083	37.2%
	Total	100.0	100.0	100.0	100.0	22.7	118,271,495	5.3%
All futures	Pure trading	43.3	42.0	37.0	37.0	47.0	59,700,009	28.4%
	Hedging	39.3	44.3	46.9	37.8	32.7	41,465,943	16.6%
	Arbitrage	17.3	13.7	16.1	25.2	20.3	25,731,417	14.5%
	Total	100.0	100.0	100.0	100.0	100.0	126,897,369	20.9%
All options	Pure trading	41.1	46.7	43.5	44.5	39.0	61,398,151	4.4%
	Hedging	49.9	44.9	48.6	47.3	39.3	61,970,759	3.1%
	Arbitrage	8.9	8.4	7.9	8.1	21.7	34,137,429	37.9%
	Total	100.0	100.0	100.0	100.0	100.0	157,506,339	7.9%
Overall market	Pure trading	42.0	44.9	41.0	42.0	42.6	121,098,160	13.2%
	Hedging	45.9	44.7	47.9	44.1	36.4	103,436,702	7.54%
	Pure trading & hedging	87.8	89.6	88.9	86.1	78.9	224,534,862	10.4%
	Arbitrage	12.2	10.4	11.1	13.9	21.1	59,868,846	25.1%
	Total	100.0	100.0	100.0	100.0	100.0	284,403,708	12.8%
Total contract volume <sup>(4)</sup>		134,581,295	124,735,839	126,370,418	175,407,040	284,403,708		

n.a.: Not available

"—": Not applicable

Notes:

- (1) Numbers may not add up to 100% due to rounding.
- (2) See glossary for the definition of implied contract volume. The total figure of each product used is the actual contract volume for that product, based on which the implied contract volume by trading purpose is computed.
- (3) Mini-HSI options (launched on 18 November 2002) and USD/CNH futures (launched on 17 September 2012) were included in the survey for the first time in 2012/13 and 2018/19 respectively. These products were omitted in the previous surveys due to their negligible contribution to the total market contract volume.
- (4) Actual total contract volume of all products under study during the study period.

### 3. TRADING BY INVESTOR TYPE

#### 3.1 Overall pattern

(See Figures 4 to 8.)

##### **Trading distribution by investor type**

- In 2018/19, investor trading (i.e. agency trading of EPs) accounted for 59% of total derivatives market contract volume while EP principal trading accounted for 41% (compared to 51% in 2014/15). The significant drop in the percentage contribution from EP principal trading came along with a significant rise in that from local investors (mainly from local institutions) while the percentage contribution from overseas investors remained more or less steady relative to 2014/15.
- The contribution from overseas investors was 29% (26% from institutions) in 2018/19, similar to the level of 28% in 2014/15. Their cumulative market share in the past decade<sup>8</sup> was 27% (24% from institutions).
- The contribution from local investors was 29% — 15% from retail (15% in 2014/15) and 14% from institutions (up from 6% in 2014/15). Over the past decade, local investors contributed 25% of cumulative market turnover.
- The contribution from institutional investors (local and overseas) to total market turnover was 40% in 2018/19 (the highest level recorded in the past decade), compared to 31% in 2014/15. Their cumulative market share in the past decade was 32%.
- The contribution from retail investors (local and overseas) was 19% in 2018/19, similar to the lowest level of 18% recorded in 2014/15. Their cumulative market share in the past decade was 20%.
- Of the 41% contribution from EP principal trading, 22% was from market maker trading (a big drop from 41% in 2014/15) and 19% was from EP proprietary trading (up from 10% in 2014/15). Over the past decade, EP principal trading contributed 48% of cumulative market turnover.
- EP principal trading remained dominant in stock options trading (68%, down from 71% in 2014/15) and was significant in index options as well (45%). However, it contributed only 16% in index futures trading and 4% of USD/CNH futures trading.

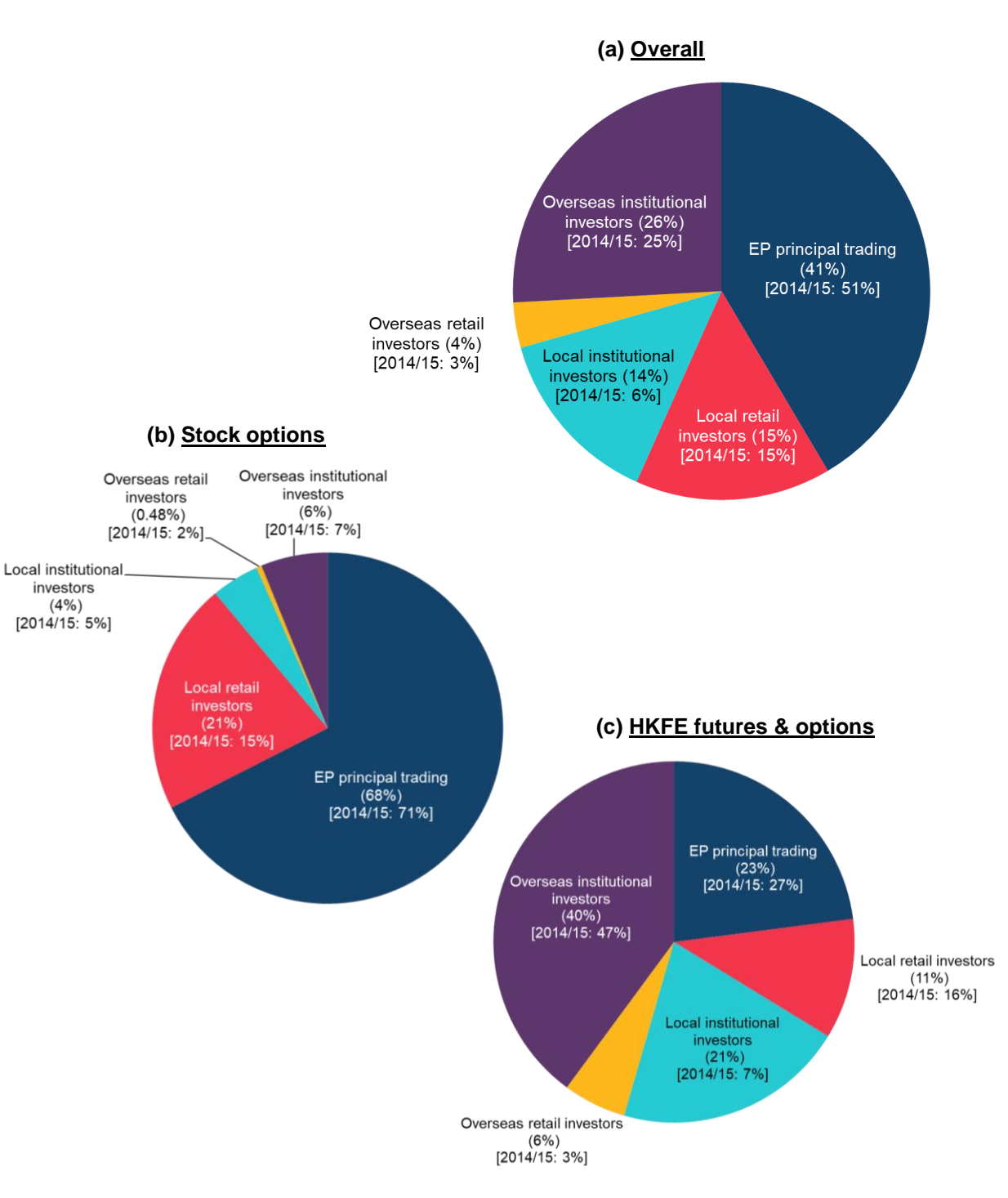
##### **Implied contract volume by investor type**

- During the period from 2014/15 to 2018/19:
  - EP principal trading recorded a CAGR of 7% (compared to a year-on-year growth of 40% in 2014/15), remarkably with a CAGR of 33% in proprietary trading but -3% in market maker trading.
  - Local investor trading volume had a CAGR of 22% — 13% for retail and 40% for institutions.
  - Overseas investor trading volume (predominantly from institutions) had a CAGR of 14% — 18% for retail and 14% for institutions.

<sup>8</sup> The “past decade” refers to the survey periods from 2009/10 to 2018/19. 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.

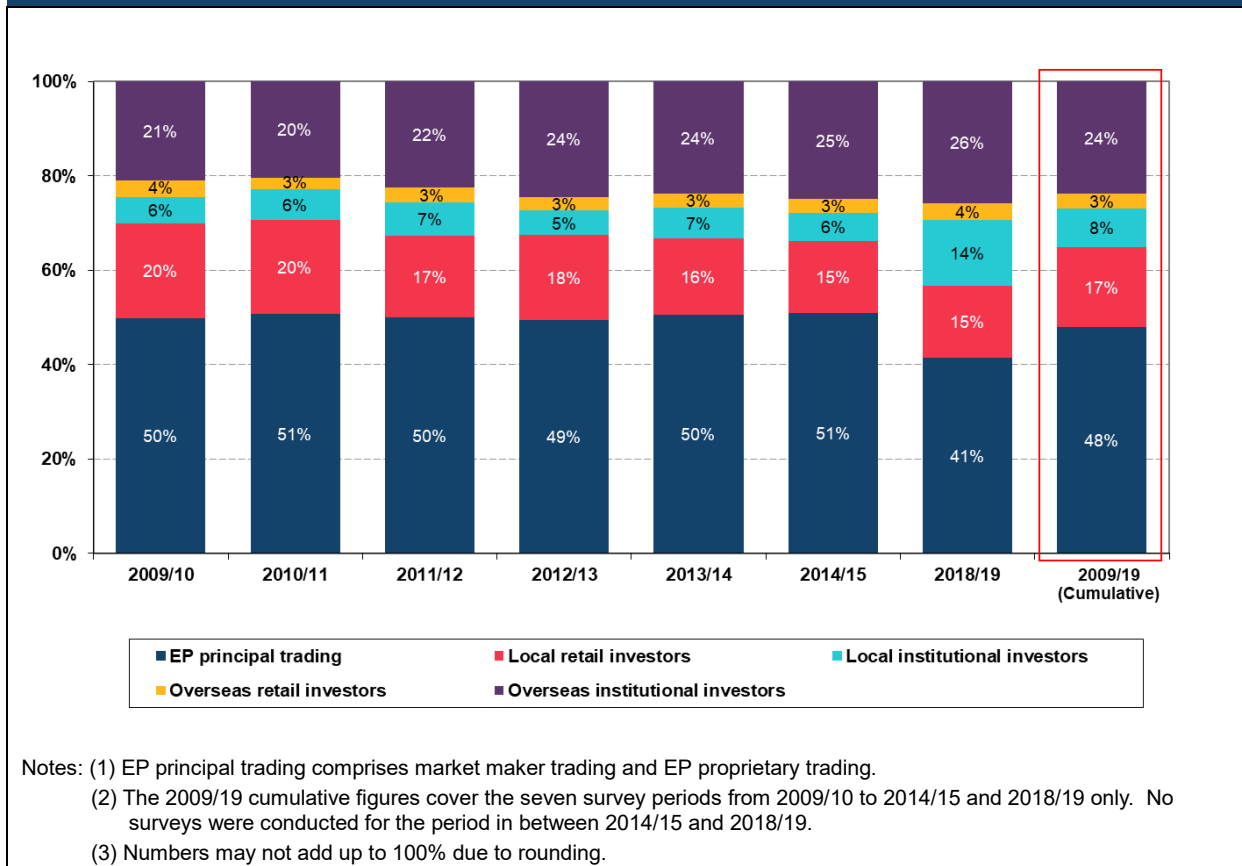
- Over the past decade, the overall derivatives market trading recorded a CAGR of 12% — 15% for overseas investor trading, 14% for local investor trading and 10% for EP principal trading.

**Figure 4. Distribution of derivatives market trading volume by investor type (Jul 2018 – Jun 2019)**

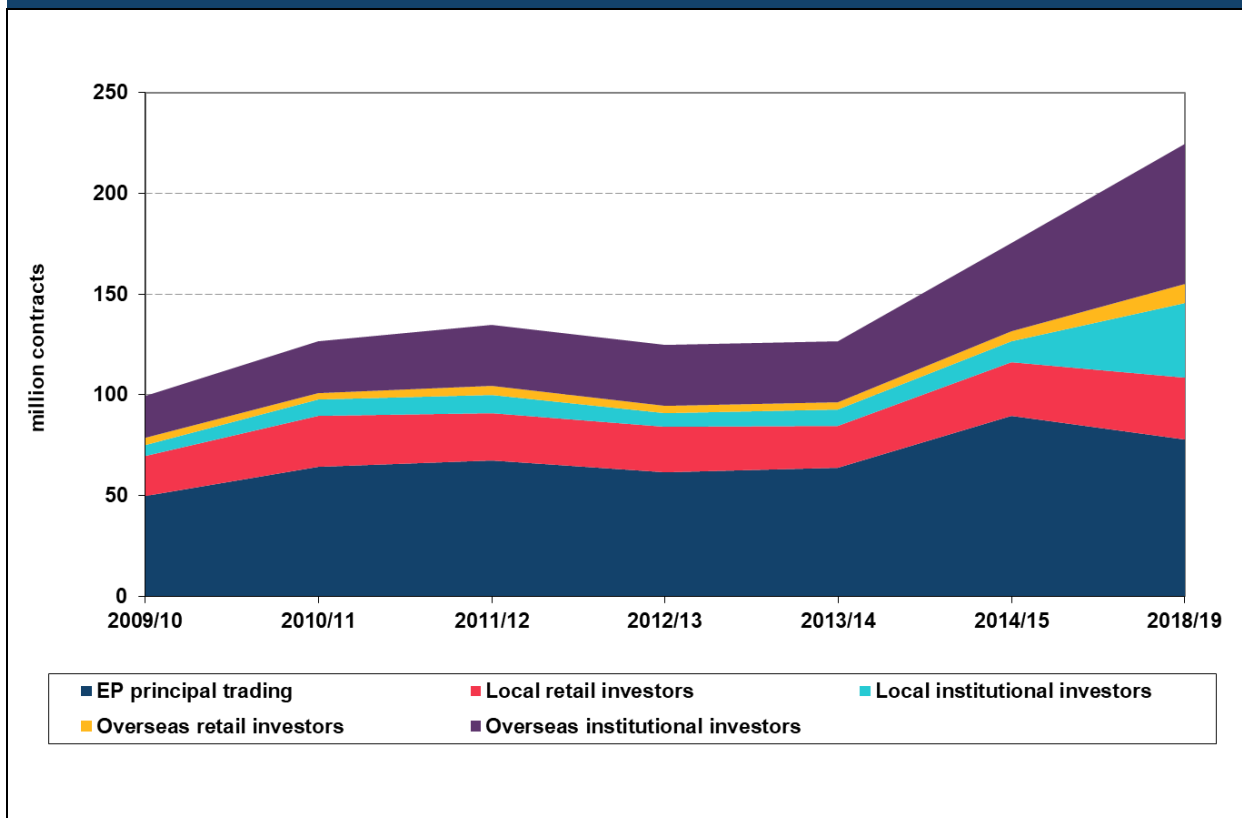


Notes: (1) EP principal trading comprises market maker trading and EP proprietary trading.  
 (2) Numbers may not add up to 100% due to rounding.

**Figure 5. Distribution of derivatives market trading volume by investor type (2009/10 – 2018/19)**



**Figure 6. Implied contract volume of derivatives by investor type (2009/10 – 2018/19)**

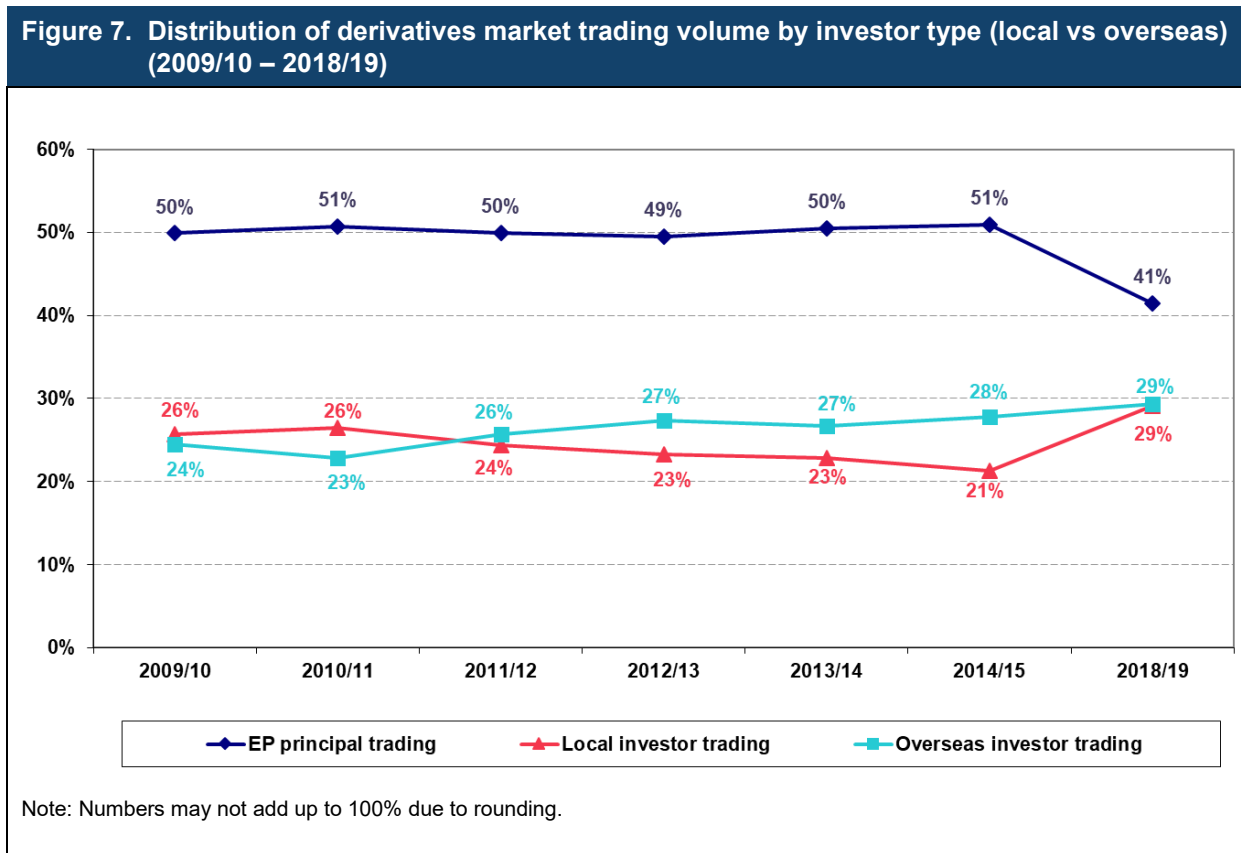


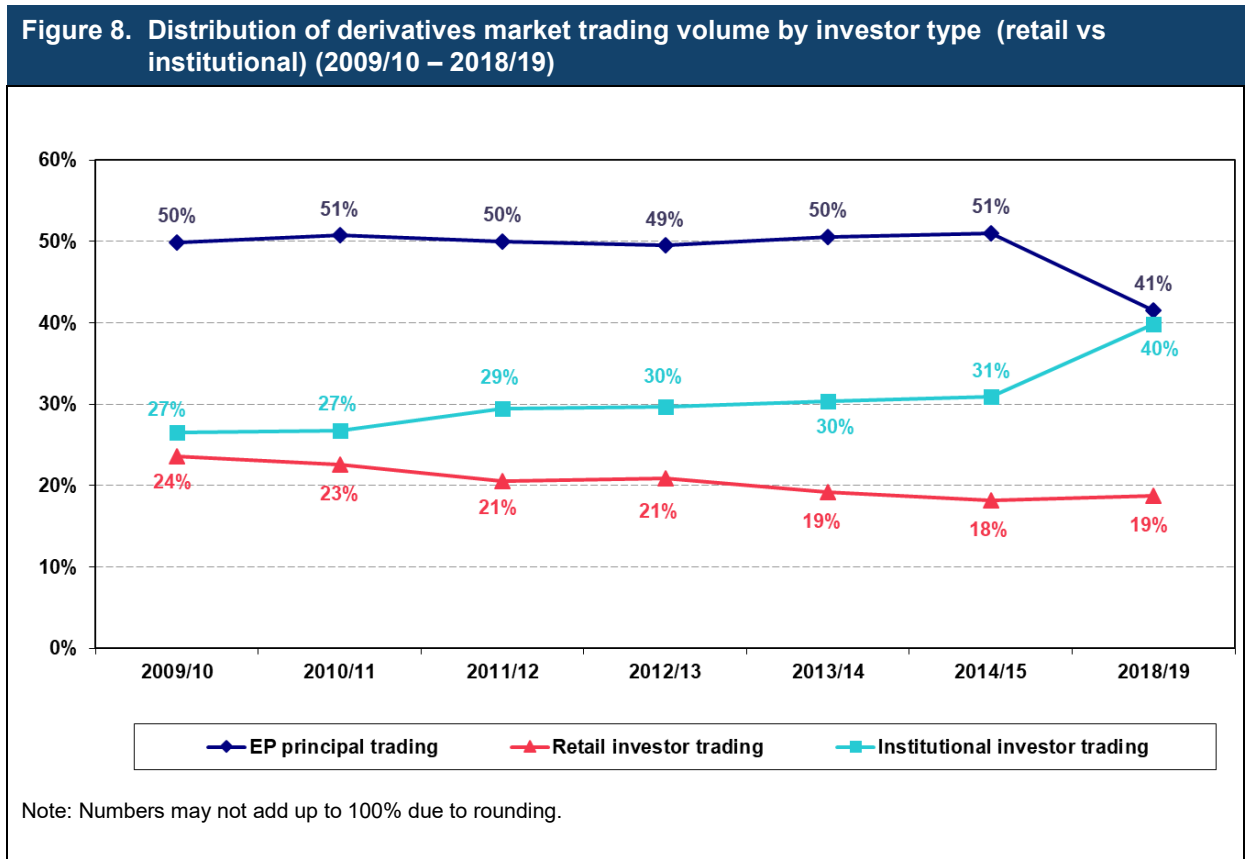
**Figure 6. Implied contract volume of derivatives by investor type (2009/10 – 2018/19) (cont'd)**

Type of trade	Annual % change*							2009/19 CAGR
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2018/19	
EP principal trading	-8.30%	29.52%	4.66%	-8.22%	3.40%	40.07%	7.19%	10.11%
Market maker	-12.30%	36.80%	4.96%	-10.98%	-0.00%	56.71%	-3.21%	6.47%
Proprietary trading	4.31%	10.22%	3.68%	0.99%	13.39%	-3.00%	33.42%	16.73%
Local investor trading	-2.47%	31.36%	-1.96%	-11.81%	-0.36%	29.09%	22.14%	14.00%
Retail	-4.12%	27.35%	-7.63%	-4.37%	-8.22%	30.27%	12.70%	8.99%
Institutional	3.91%	45.67%	15.73%	-30.33%	26.50%	26.18%	39.56%	24.35%
Overseas investor trading	6.96%	18.98%	19.09%	-1.28%	-1.06%	44.72%	14.39%	14.68%
Retail	6.22%	-8.93%	32.26%	-14.67%	1.32%	38.41%	18.30%	12.22%
Institutional	7.08%	23.70%	17.45%	0.60%	-1.34%	45.49%	13.91%	15.05%
Retail investor trading	-2.69%	21.89%	-3.14%	-5.95%	-6.89%	31.50%	13.65%	9.53%
Institutional investor trading	6.40%	28.35%	17.04%	-6.74%	3.59%	41.31%	20.26%	17.56%
<b>Total</b>	<b>-3.45%</b>	<b>27.41%</b>	<b>6.21%</b>	<b>-7.32%</b>	<b>1.31%</b>	<b>38.80%</b>	<b>12.84%</b>	<b>12.38%</b>

\* 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 for surveys before 2018/19 Survey, and refers to the CAGR during the period from 2014/15 to 2018/19 for the 2018/19 Survey.

Notes: (1) EP principal trading comprises market maker trading and EP proprietary trading.  
 (2) Numbers may not add up to 100% due to rounding.





### 3.2 Trading by product

(See Figure 9 and Tables 2 and 3.)

#### **Trading distribution by investor type**

- For **HSI futures**, the contribution from overseas institutional investors was the most significant — 47% in 2018/19, down from the previous record high of 58% in 2014/15. The contribution from local institutional investors rose significantly from 6% in 2014/15 to 22% in 2018/19. The contribution from EP proprietary trading was 14% of the product’s turnover (compared to 15% in 2014/15), the lowest level recorded in the past decade.
- For **HSCEI futures**, overseas investors remained the major contributor group, albeit with their contribution dropped to 45% in 2018/19 from the record high of 67% in 2014/15, mainly from overseas institutional investors (44%). The contribution from EP proprietary trading was 29% (up from 17% in 2014/15) and was the highest recorded in the past decade. Local investors’ contribution was 26% (compared to 16% in 2014/15). Notably, local institutional investors’ contribution rose to 22% from 7% in 2014/15.
- For **Mini-HSI futures**, overseas institutional investors for the first time became the largest contributor group — contributing 44% of the product’s turnover (37% in 2014/15), while local retail investors’ contribution dropped to 27% from 37% in 2014/15. Notably, the contribution from local institutional investors rose to 17% from 3% in in 2014/15 while that from overseas retail investors grew to 8% from 5% in in 2014/15. The contribution from EP proprietary trading was 5% in 2018/19 (further down from 18% in in 2014/15), the lowest level recorded in the past decade.



- For **Mini-HSCEI futures**, the trading pattern in 2018/19 was similar to that for Mini-HSI futures. Overseas institutional investors were still the largest contributor group, contributing 45% of the product's turnover (up from 39% in 2014/15). The contribution from local retail investors was also significant (33%, similar to the level in 2014/15). Notably, the contribution from local institutional investors rose from 2% in 2014/15 to 12% in 2018/19. The contribution from EP proprietary trading dropped to 5% in 2018/19 from 19% in 2014/15, the lowest level recorded since the inclusion of the product in the survey in 2010/11.
- For **HSI options**, the turnover was almost equally shared between EP principal trading (50%, down from 61% in 2014/15) and investor trading in 2018/19. For EP principal trading, 42% was from market maker trading (down from 58% in 2014/15) and 8% from proprietary trading (up from 3% in 2014/15). Local investors' contribution rose slightly from 24% in 2014/15 to 27%. An increase to a larger extent was observed in the contribution from overseas investors — 23% in 2018/19, up from 14% in 2014/15 (reflecting mainly the increase in overseas institutional investors' contribution from 12% to 20%).
- For **HSCEI options**, EP principal trading contributed 40% of the product's turnover in 2018/19 (compared to 51% in 2014/15) — 23% from market maker trading (down from 31% in 2014/15) and 17% from proprietary trading (down from 20% in 2014/15). The contribution from local investors for the first time surpassed that from overseas investors, rising to 32% from 18% in 2014/15 (driven mainly by the substantial increase in the contribution from local institutional investors from 12% to 29%). Overseas investors' contribution recorded a slight decrease from 31% in 2014/15 to 28% in 2018/19.
- For **Mini-HSI options**, EP principal trading remained dominant, contributing 59% of the product's turnover in 2018/19 (down from 68% in 2014/15) — almost all came from market maker trading. The contribution from local investors rose from 28% in 2014/15 to 35% in 2018/19, mainly from local retail investors (33%).
- For **USD/CNH futures**, included for the first time in the survey, overseas investors contributed 57% of the product's turnover in 2018/19 (43% from institutions and 14% from retail). The contribution from local investors was 39% (35% from institutions and 4% from retail). EP proprietary trading accounted for only 4%.
- For **stock options**, EP principal trading remained dominant, contributing 68% of the product's turnover in 2018/19 (down from 71% in 2014/15) — 43% from market maker trading (down from 66% in 2014/15) and 25% from proprietary trading (a big jump from 5% in 2014/15). Local investors' contribution was 26% — 21% from retail (the highest record level) and 5% from institutions (15% and 5% respectively in 2014/15). Overseas investors contributed 7% of the product's turnover, mainly from institutions (6%).
- In 2018/19, overseas institutional investors were the largest contributor group to the aggregate trading in all index futures (45%); EP principal trading (mainly market making) dominated in options trading, whether index options (45%) or stock options (68%). For the newly included currency futures product (USD/CNH futures), overseas investor trading dominated (57%), mostly from institutions (43%) (similar to the case for index futures).

### **Implied contract volume by trade type**

During the period from 2014/15 to 2018/19:

- For **HSI futures**, local institutional investor trading volume experienced the biggest CAGR of 85% among all trade types (compared to a CAGR of 35% on the product's total trading volume). Trading volume from overseas retail investors had a CAGR of 81% and that from overseas institutional investors had a CAGR of 28%.
- For **HSCEI futures**, trading volume from local institutional investors and proprietary trading had a CAGR of 45% and 23% respectively (compared to the CAGR of 8% in the product's volume) while other types of investor trading experienced a negative growth.

- For **Mini-HSI futures**, high positive CAGRs were recorded in all trade types, except for EP proprietary trading which had a negative CAGR. In particular, local and overseas institutional investor trading volume recorded a CAGR of 105% and 37% respectively (compared to the CAGR of 32% in the product's volume).
- For **Mini-HSCEI futures**, local institutional investor trading was the only trade type with a positive CAGR (39%), compared to the CAGR of -7% in the product's trading volume.
- For **HSI options**, all trade types recorded a positive CAGR in volume, notably 41% for EP proprietary trading, 29% for overseas institutional investor trading and 19% for local institutional investor trading, compared to 12% in the product's volume.
- For **HSCEI options**, a CAGR of 50% was recorded for local institutional investor trading volume and 27% for overseas retail investor trading volume (though from a small base), compared to the CAGR of 22% in the product's volume.
- For **Mini-HSI options**, overseas institutional trading volume recorded the highest CAGR of 74%, followed by local institutional trading volume with a CAGR of 56% (compared to the CAGR of 29% in the product's volume), both from a small base. The major investor contributor group — local retail investors — also had a high CAGR (36%) in trading volume. EP principal trading (predominantly market making) recorded a CAGR of 25% in volume.
- For **stock options**, EP proprietary trading volume recorded a high CAGR of 57% from its relatively small base in 2014/15. Local retail investor trading volume and overseas institutional investor trading volume recorded a CAGR of 16% and 3% respectively, while the other trade types experienced a negative CAGR in volume compared to the CAGR of 5% in the product's volume.

During the period from 2009/10 to 2018/19:

- For all index futures and options, local institutional investor trading volume experienced the highest 10-year CAGR of 28% among all trade types (doubled the 10-year CAGR of 14% in aggregate volume for all index futures and options).
- For stock options, EP proprietary trading recorded the highest CAGR of 25%, followed by local retail investor trading volume (a CAGR of 16%), compared to the overall 10-year CAGR of 10% in the product's volume.

<b>Table 2. Distribution of derivatives trading by investor type (2011/12 – 2018/19)</b>								
Type of investor	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup>		
	2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15 - 2018/19)	CAGR (2009/10 - 2018/19)
<b>HSI Futures</b>								
EP Proprietary trading	22.3	19.7	19.6	15.4	14.0	8,125,125	31.6%	8.7%
Local investors	29.8	26.9	26.0	23.2	29.2	16,999,248	42.8%	9.8%
Retail	21.8	20.5	19.2	17.1	7.5	4,371,805	9.8%	-3.7%
Institutional	8.0	6.4	6.8	6.1	21.7	12,627,443	84.9%	29.8%
Overseas investors	47.9	53.4	54.3	61.4	56.8	33,073,795	32.2%	15.4%
Retail	3.8	4.8	3.7	3.0	9.6	5,596,087	80.5%	18.2%
Institutional	44.1	48.5	50.6	58.4	47.2	27,477,708	27.8%	14.9%
Total	100.0	100.0	100.0	100.0	100.0	58,198,168	34.8%	12.4%
<b>HFI Futures</b>								
EP Proprietary trading	25.9	26.3	24.7	17.4	29.1	10,945,084	22.9%	14.9%
Local investors	15.7	14.1	14.6	15.7	26.0	9,768,437	22.5%	20.2%
Retail	7.3	6.9	6.8	8.8	3.7	1,380,856	-13.1%	0.4%
Institutional	8.3	7.2	7.8	6.9	22.3	8,387,581	44.7%	35.7%
Overseas investors	58.5	59.5	60.7	66.9	44.9	16,851,768	-2.3%	10.4%
Retail	2.1	1.7	2.5	3.5	1.4	509,528	-14.9%	6.4%
Institutional	56.4	57.8	58.2	63.4	43.5	16,342,240	-1.7%	10.6%
Total	100.0	100.0	100.0	100.0	100.0	37,565,289	8.0%	13.6%
<b>Mini-HSI Futures</b>								
EP Proprietary trading	24.8	25.0	29.1	18.2	4.7	1,157,185	-6.0%	-4.4%
Local investors	52.3	45.5	43.4	39.9	44.1	10,824,605	35.1%	10.0%
Retail	46.8	43.7	40.6	37.0	26.8	6,564,746	21.5%	5.4%
Institutional	5.5	1.8	2.8	3.0	17.4	4,259,859	105.0%	27.1%
Overseas investors	22.9	29.5	27.5	41.9	51.1	12,543,870	38.5%	19.8%
Retail	7.5	8.7	6.2	4.6	7.6	1,862,871	49.1%	9.6%
Institutional	15.4	20.8	21.3	37.2	43.6	10,680,999	37.0%	23.0%
Total	100.0	100.0	100.0	100.0	100.0	24,525,660	31.7%	12.1%
<b>Mini-HFI Futures</b>								
EP Proprietary trading	41.8	37.2	35.3	18.5	5.2	235,398	-32.2%	n.a.
Local investors	43.8	49.7	42.9	35.8	44.8	2,025,539	-1.5%	n.a.
Retail	40.2	48.8	40.6	33.4	32.9	1,486,732	-7.2%	n.a.
Institutional	3.6	0.9	2.2	2.4	11.9	538,807	39.0%	n.a.
Overseas investors	14.5	13.1	21.8	45.7	49.9	2,255,597	-4.8%	n.a.
Retail	7.7	8.3	7.1	6.9	4.9	223,258	-14.4%	n.a.
Institutional	6.8	4.7	14.8	38.7	45.0	2,032,339	-3.3%	n.a.
Total	100.0	100.0	100.0	100.0	100.0	4,516,534	-6.9%	n.a.
<b>Index futures</b>								
EP Proprietary trading	24.6	23.7	24.1	17.0	16.4	20,462,793	19.3%	10.0%
Local investors	30.5	26.0	24.4	23.3	31.7	39,617,828	30.1%	12.4%
Retail	23.0	20.3	18.0	17.6	11.1	13,804,138	7.2%	2.0%
Institutional	7.4	5.7	6.4	5.7	20.7	25,813,690	66.3%	31.2%
Overseas investors	44.9	50.3	51.5	59.7	51.9	64,725,030	16.3%	14.9%
Retail	4.2	4.4	3.7	3.9	6.6	8,191,744	37.5%	14.9%
Institutional	40.7	45.8	47.8	55.8	45.3	56,533,286	14.3%	14.9%
Total	100.0	100.0	100.0	100.0	100.0	124,805,651	20.4%	13.2%

Table 2. Distribution of derivatives trading by investor type (2011/12 – 2018/19) (cont'd)								
Type of investor	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup>		
	2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15 - 2018/19)	CAGR (2009/10 - 2018/19)
<b>HSI Options</b>								
Principal trading <sup>(4)</sup>	51.4	49.5	56.1	61.4	50.1	6,239,885	6.7%	7.8%
Market makers	46.1	41.6	50.6	58.2	42.0	5,224,268	3.5%	7.9%
Proprietary trading	5.3	7.9	5.6	3.2	8.2	1,015,616	41.4%	7.2%
Local investors	28.3	30.1	32.5	24.2	26.8	3,339,804	15.2%	4.0%
Retail	18.7	22.7	26.3	18.0	18.9	2,351,218	13.7%	4.9%
Institutional	9.7	7.4	6.2	6.2	7.9	988,586	19.4%	2.1%
Overseas investors	20.3	20.4	11.4	14.4	23.0	2,863,928	26.3%	9.7%
Retail	2.4	2.7	2.7	2.8	3.0	373,786	14.6%	7.1%
Institutional	17.8	17.7	8.7	11.6	20.0	2,490,142	28.6%	10.1%
Total	100.0	100.0	100.0	100.0	100.0	12,443,617	12.3%	7.0%
<b>HFI Options</b>								
Principal trading <sup>(4)</sup>	47.2	51.2	48.6	50.8	40.3	9,600,583	14.9%	30.1%
Market makers	33.4	29.0	23.5	30.9	23.2	5,533,977	13.3%	29.4%
Proprietary trading	13.8	22.2	25.1	19.8	17.1	4,066,606	17.2%	31.0%
Local investors	21.9	19.8	22.7	18.3	31.6	7,520,833	39.5%	29.6%
Retail	2.7	3.7	3.7	6.0	2.8	656,943	0.4%	11.6%
Institutional	19.2	16.1	19.1	12.4	28.8	6,863,890	50.4%	34.2%
Overseas investors	30.9	28.9	28.7	30.9	28.1	6,707,241	18.9%	27.5%
Retail	0.4	0.7	1.0	1.4	1.7	411,280	27.4%	25.0%
Institutional	30.5	28.2	27.7	29.5	26.4	6,295,961	18.5%	27.7%
Total	100.0	100.0	100.0	100.0	100.0	23,828,657	21.7%	29.2%
<b>Mini-HSI Options <sup>(3)</sup></b>								
Principal trading <sup>(4)</sup>	n.a.	54.5	56.4	67.8	59.1	1,751,223	24.5%	n.a.
Market makers	n.a.	54.3	55.2	67.7	59.1	1,751,026	24.6%	n.a.
Proprietary trading	n.a.	0.3	1.2	0.0	0.0	197	-20.9%	n.a.
Local investors	n.a.	34.7	38.7	27.8	35.4	1,047,992	36.9%	n.a.
Retail	n.a.	33.8	37.8	26.9	33.4	989,568	36.1%	n.a.
Institutional	n.a.	0.9	1.0	0.9	2.0	58,423	56.5%	n.a.
Overseas investors	n.a.	10.7	4.9	4.4	5.5	163,356	36.1%	n.a.
Retail	n.a.	7.1	4.4	4.0	4.2	125,396	30.3%	n.a.
Institutional	n.a.	3.7	0.4	0.4	1.3	37,959	74.5%	n.a.
Total	n.a.	100.0	100.0	100.0	100.0	2,962,570	28.9%	n.a.
<b>Index options</b>								
Principal trading <sup>(4)</sup>	50.1	50.6	52.2	55.9	44.8	17,591,691	12.3%	17.6%
Market makers	42.1	37.6	36.8	43.7	31.9	12,509,271	9.7%	16.4%
Proprietary trading	8.0	13.0	15.4	12.2	13.0	5,082,420	20.5%	21.2%
Local investors	26.2	26.4	27.8	21.2	30.4	11,908,628	29.9%	16.2%
Retail	13.5	16.0	15.2	11.9	10.2	3,997,729	14.3%	9.5%
Institutional	12.7	10.4	12.6	9.3	20.2	7,910,899	44.0%	22.2%
Overseas investors	23.7	23.1	20.0	22.9	24.8	9,734,525	21.1%	19.2%
Retail	1.8	2.3	1.9	2.1	2.3	910,462	21.6%	15.1%
Institutional	21.9	20.8	18.1	20.8	22.5	8,824,063	21.0%	19.8%
Total	100.0	100.0	100.0	100.0	100.0	39,234,844	18.7%	17.5%
<b>Index futures &amp; options</b>								
Principal trading <sup>(4)</sup>	30.4	30.9	31.4	26.7	23.0	38,054,484	15.8%	12.9%
Market makers	9.5	10.1	9.5	10.9	7.5	12,509,271	9.7%	16.4%
Proprietary trading	20.9	20.8	21.8	15.8	15.4	25,545,213	19.5%	11.5%
Local investors	29.5	26.1	25.3	22.8	31.5	51,526,456	30.1%	13.2%
Retail	20.9	19.1	17.3	16.2	10.8	17,801,868	8.6%	3.3%
Institutional	8.6	7.0	8.0	6.6	20.7	33,724,589	59.5%	28.4%
Overseas investors	40.1	43.0	43.3	50.5	45.5	74,459,555	16.8%	15.4%
Retail	3.6	3.9	3.2	3.4	5.6	9,102,206	35.4%	14.9%
Institutional	36.4	39.1	40.1	47.1	39.9	65,357,349	15.1%	15.5%
Total	100.0	100.0	100.0	100.0	100.0	164,040,495	20.0%	14.1%

Table 2. Distribution of derivatives trading by investor type (2011/12 – 2018/19) (cont'd)								
Type of investor	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup>		
	2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15 - 2018/19)	CAGR (2009/10 - 2018/19)
<b>USD/CNH futures <sup>(3)</sup></b>								
EP Proprietary trading	n.a.	n.a.	n.a.	n.a.	4.1	85,687	n.a.	—
Local investors	n.a.	n.a.	n.a.	n.a.	39.1	816,890	n.a.	—
Retail	n.a.	n.a.	n.a.	n.a.	4.1	85,462	n.a.	—
Institutional	n.a.	n.a.	n.a.	n.a.	35.0	731,428	n.a.	—
Overseas investors	n.a.	n.a.	n.a.	n.a.	56.8	1,189,141	n.a.	—
Retail	n.a.	n.a.	n.a.	n.a.	13.6	284,235	n.a.	—
Institutional	n.a.	n.a.	n.a.	n.a.	43.3	904,906	n.a.	—
Total	n.a.	n.a.	n.a.	n.a.	100.0	2,091,718	n.a.	—
<b>Stock options</b>								
Principal trading <sup>(4)</sup>	69.2	69.8	71.1	70.9	67.5	79,848,010	4.0%	9.0%
Market makers	66.9	66.3	65.3	65.9	43.0	50,814,300	-5.4%	5.0%
Proprietary trading	2.3	3.5	5.7	4.9	24.5	29,033,710	57.3%	24.7%
Local investors	19.4	20.0	20.2	20.0	25.8	30,554,685	12.3%	15.1%
Retail	14.0	16.7	15.2	14.5	21.4	25,325,023	16.0%	16.1%
Institutional	5.4	3.4	5.0	5.4	4.4	5,229,662	-0.1%	11.0%
Overseas investors	11.4	10.2	8.8	9.2	6.7	7,868,800	-2.8%	8.2%
Retail investors	2.7	1.9	2.5	2.5	0.5	569,683	-30.0%	-5.2%
Institutional investors	8.7	8.3	6.2	6.7	6.2	7,299,117	3.2%	10.6%
Total	100.0	100.0	100.0	100.0	100.0	118,271,495	5.3%	10.2%
<b>Overall market</b>								
Principal trading <sup>(4)</sup>	50.0	49.5	50.5	51.0	41.5	117,988,180	7.2%	10.1%
Market makers	38.4	36.9	36.4	41.1	22.3	63,323,571	-3.2%	6.5%
Proprietary trading	11.5	12.6	14.1	9.8	19.2	54,664,609	33.4%	16.7%
Local investors	24.4	23.2	22.8	21.2	29.1	82,898,031	22.1%	14.0%
Retail investors	17.4	18.0	16.3	15.3	15.2	43,212,353	12.7%	9.0%
Institutional investors	7.0	5.3	6.6	6.0	14.0	39,685,679	39.6%	24.4%
Overseas investors	25.6	27.3	26.7	27.8	29.4	83,517,497	14.4%	14.7%
Retail investors	3.2	2.9	2.9	2.9	3.5	9,956,125	18.3%	12.2%
Institutional investors	22.5	24.4	23.8	24.9	25.9	73,561,372	13.9%	15.1%
Total	100.0	100.0	100.0	100.0	100.0	284,403,708	12.8%	12.4%

n.a.: Not available

“—”: Not applicable

Notes:

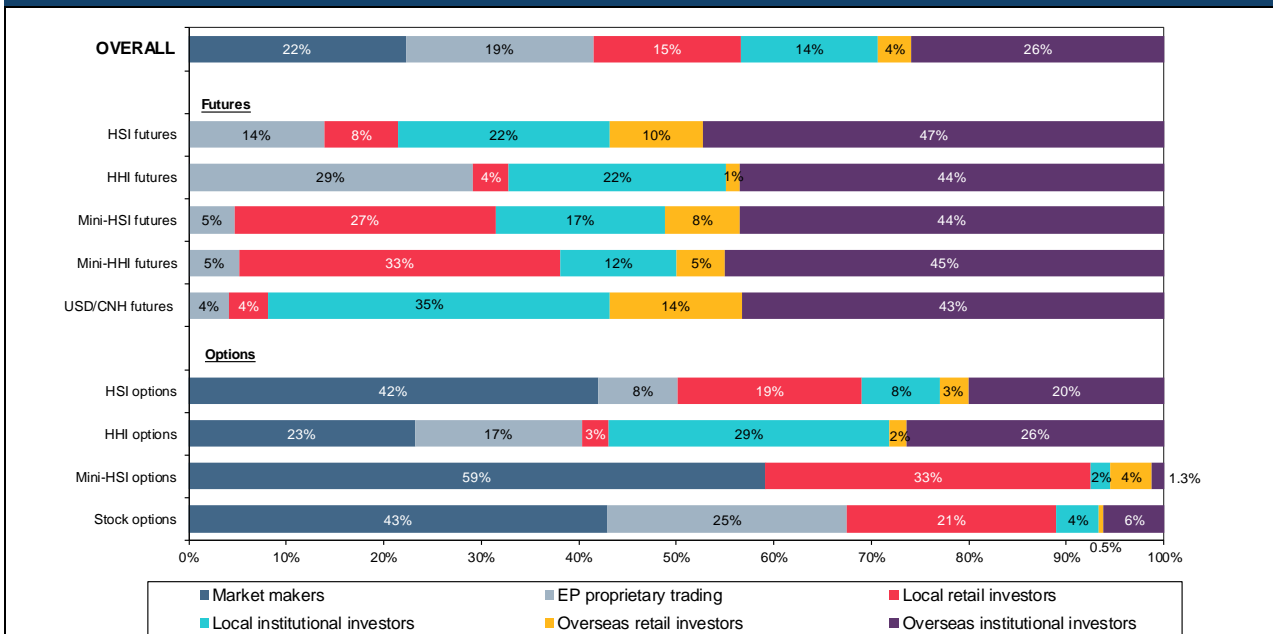
(1) Numbers may not add up to 100% due to rounding.

(2) See glossary for the definition of implied contract volume. The total figure of each product used is the actual contract volume for that product, based on which the implied contract volume by investor type is computed.

(3) Mini-HHI futures (launched on 31 March 2008), Mini-HSI options (launched on 18 November 2002) and USD/CNH futures (launched on 17 September 2012) were included in the survey for the first time in 2010/11, 2012/13 and 2018/19 respectively. These products were omitted in the previous surveys due to their negligible contribution to the total market contract volume.

(4) Principal trading comprises market maker trading and EP proprietary trading.

**Figure 9. Distribution of derivatives market trading volume by investor type for overall market and each product (Jul 2018 – Jun 2019)**



Notes:

- (1) Market maker trading and EP proprietary trading are components of EP principal trading.
- (2) Numbers may not add up to 100% due to rounding.

**Table 3. Business composition of Exchange Participants in derivatives by trade type (in volume terms) (%)**

	2011/12 Overall	2012/13 Overall	2013/14 Overall	2014/15 Overall	2018/19 Overall	2018/19															
						HSI futures	HSI options	Mini-HSI futures	Mini-HSI options	HHI futures	HHI options	Mini-HHI futures	USD/CNH futures	Stock options							
<b>All trading</b>																					
Principal <sup>#</sup>	50.0	49.5	50.5	51.0	41.5	14.0	50.1	4.7	59.1	29.1	40.3	5.2	4.1	67.5							
Agency	50.0	50.5	49.5	49.0	58.5	86.0	49.9	95.3	40.9	70.9	59.7	94.8	95.9	32.5							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
<b>Agency trading</b>																					
Local investors	48.8	46.0	46.1	43.3	49.8	33.9	53.8	46.3	86.5	36.7	52.9	47.3	40.7	79.5							
Overseas investors	51.2	54.0	53.9	56.7	50.2	66.1	46.2	53.7	13.5	63.3	47.1	52.7	59.3	20.5							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
<b>Agency trading</b>																					
Retail investors	41.1	41.3	38.7	37.0	31.9	19.9	43.9	36.1	92.0	7.1	7.5	39.9	18.4	67.4							
Institutional investors	58.9	58.7	61.3	63.0	68.1	80.1	56.1	63.9	8.0	92.9	92.5	60.1	81.6	32.6							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
<b>Retail investor trading</b>																					
Local	84.7	86.1	84.8	84.0	81.3	43.9	86.3	77.9	88.8	73.0	61.5	86.9	23.1	97.8							
Overseas	15.3	13.9	15.2	16.0	18.7	56.1	13.7	22.1	11.2	27.0	38.5	13.1	76.9	2.2							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
<b>Institutional investor trading</b>																					
Local	23.7	17.7	21.6	19.3	35.0	31.5	28.4	28.5	60.6	33.9	52.2	21.0	44.7	41.7							
Overseas	76.3	82.3	78.4	80.7	65.0	68.5	71.6	71.5	39.4	66.1	47.8	79.0	55.3	58.3							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
<b>Local investor trading</b>																					
Retail	71.3	77.4	71.3	71.9	52.1	25.7	70.4	60.6	94.4	14.1	8.7	73.4	10.5	82.9							
Institutional	28.7	22.6	28.7	28.1	47.9	74.3	29.6	39.4	5.6	85.9	91.3	26.6	89.5	17.1							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
<b>Overseas investor trading</b>																					
Retail	12.3	10.6	10.9	10.4	11.9	16.9	13.1	14.9	76.8	3.0	6.1	9.9	23.9	7.2							
Institutional	87.7	89.4	89.1	89.6	88.1	83.1	86.9	85.1	23.2	97.0	93.9	90.1	76.1	92.8							
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							

<sup>#</sup> EP principal trading comprises market maker trading and EP proprietary trading.

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

## 4. OVERSEAS INVESTOR TRADING BY ORIGIN

### 4.1 Overall pattern

(See Figures 10 to 13.)

#### **Trading distribution by origin**

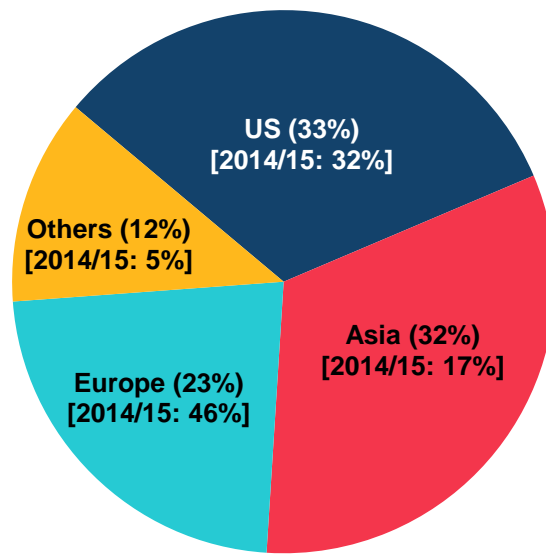
Overseas investors in aggregate contributed 29% of total market turnover in 2018/19 (compared to 28% in 2014/15) and experienced a CAGR of 14% in contract volume during the period from 2014/15 to 2018/19 and a CAGR of 15% over the past decade.

- **US investors** remained as the largest contributor group in 2018/19 — 33% of overseas investor trading (up from 32% in 2014/15) or 10% of total market turnover (up from 9% in 2014/15).
- Asian investors contributed in aggregate 32% of overseas investor trading in 2018/19 (up from 17% in 2014/15, the highest level since 2011/12) or 10% of total market volume (5% in 2014/15).
- European investors contributed in aggregate 23% of overseas investor trading in 2018/19 (down from 46% in 2014/15) or 7% of total market turnover (13% in 2014/15).

#### **Implied contract volume by origin**

- US investor trading volume recorded a CAGR of 15% over the period from 2014/15 to 2018/19, compared to the CAGR of 14% for total overseas investor trading in the same period. An even higher CAGR of 18% was achieved in the past decade.
- Over the period from 2014/15 to 2018/19, Asian investor trading volume recorded an overall CAGR of 35% and a CAGR of 16% in the past decade.
- Investor trading volume from Europe achieved a CAGR of 8% in the past decade despite a negative CAGR of 4% over the period from 2014/15 to 2018/19.

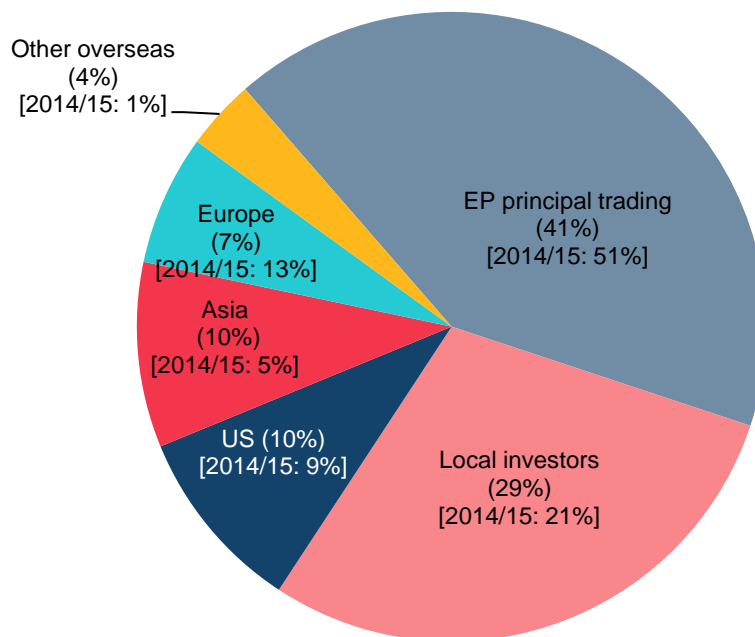
**Figure 10. Distribution of overseas investor trading volume in derivatives by origin (Jul 2018 – Jun 2019)**



**Notes:**

- (1) Reported origins in Asia in 2018/19 comprised Japan, India, Indonesia, Macau of China, Mainland China, Malaysia, Philippines, Singapore, South Korea, Taiwan of China, Thailand and Vietnam.
- (2) Reported origins in Europe in 2018/19 comprised the United Kingdom, Netherlands and the rest of Europe.
- (3) Reported origins in "Others" in 2018/19 comprised Anguilla, Antarctica, Australia, Brazil, British Jersey and Virgin Islands, British Virgin Islands, Canada, Cayman Islands, Channel Island, Cyprus, Israel, New Zealand, Samoa, Senegal, Seychelles, South Africa and United Arab Emirates.
- (4) Numbers may not add up to 100% due to rounding.

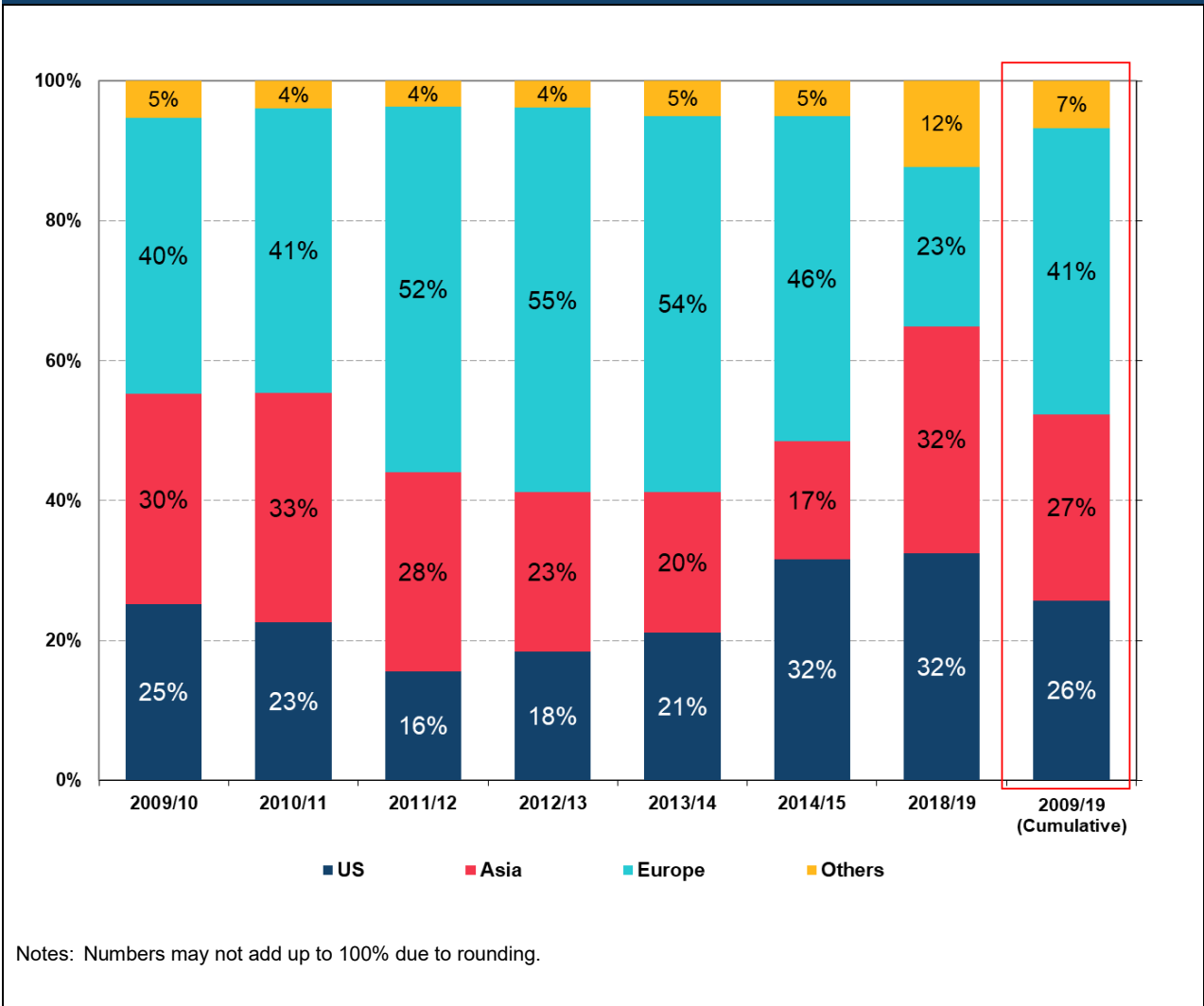
**Figure 11. Distribution of derivatives market trading volume by local and overseas origins (Jul 2018 – Jun 2019)**



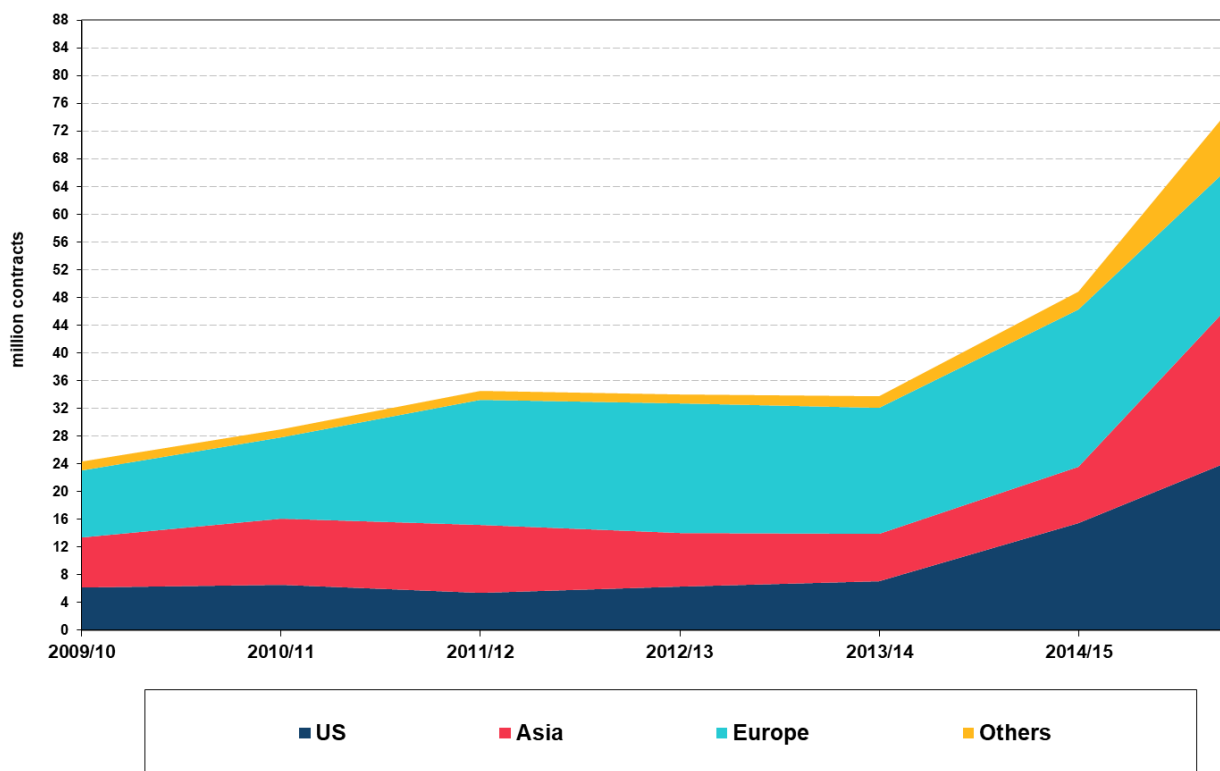
Note: Numbers may not add up to 100% due to rounding.



**Figure 12. Distribution of overseas investor trading volume in derivatives by origin (2009/10 – 2018/19)**



**Figure 13. Implied contract volume of overseas investor trading in derivatives by origin (2009/10 – 2018/19)**



Overseas origin	Annual % change*							2009/19 CAGR
	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2018/19	
US	41.19%	6.61%	-17.74%	16.49%	13.73%	116.41%	15.19%	17.98%
Europe	5.85%	22.53%	52.55%	4.07%	-3.18%	24.96%	-4.23%	7.88%
Asia	31.25%	29.93%	3.51%	-21.17%	-12.97%	21.62%	34.76%	15.65%
Others	-65.99%	-11.11%	13.69%	1.54%	29.07%	46.87%	42.54%	26.05%
<b>Total</b>	<b>6.96%</b>	<b>18.98%</b>	<b>19.09%</b>	<b>-1.28%</b>	<b>-1.06%</b>	<b>44.72%</b>	<b>14.39%</b>	<b>14.68%</b>

\* 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 for surveys before 2018/19 Survey, and refers to the CAGR during the period from 2014/15 to 2018/19 for the 2018/19 Survey.

## 4.2 Trading by market segment

The stock options market segment is served by SOEPs while the market segment in other futures and options is served by FEPs. Overseas investor trading constituted only 7% of stock options trading but 46% of all index futures and options trading and 57% of all USD/CNH futures trading. The distribution of overseas investor trading by origin for stock options also differed from that of other futures and options.

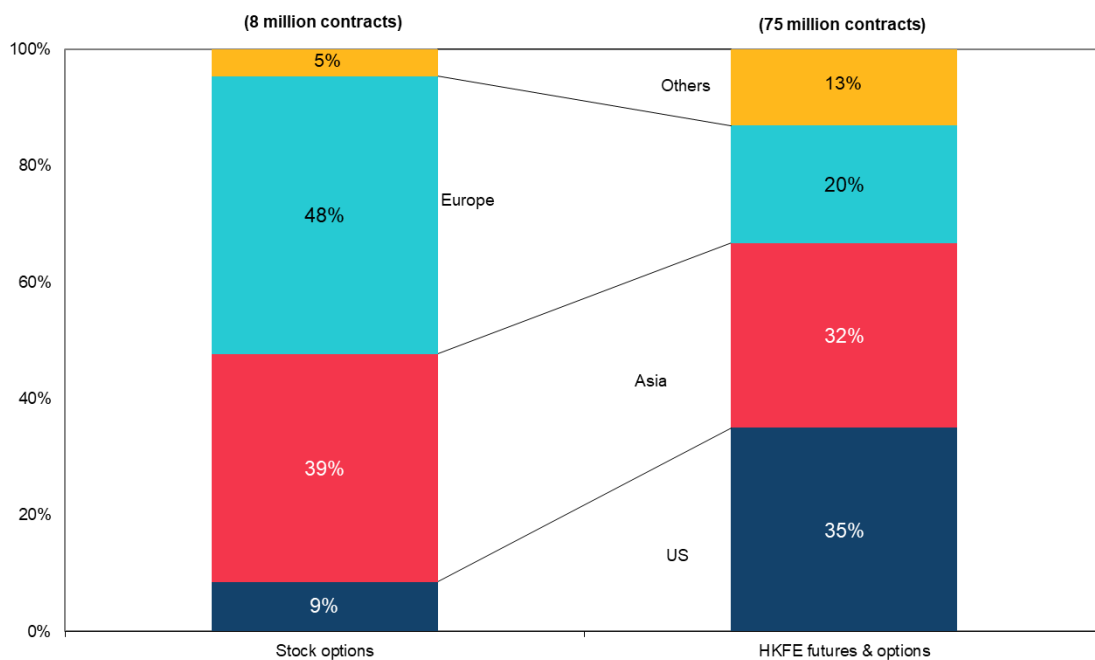
- **For stock options**, the contribution from European investors increased slightly from 47% of overseas investor trading in 2014/15 to 48% in 2018/19, who was the largest overseas contributor group to the product's volume. The contribution from Asian investors dropped from 43% of overseas investor trading in 2014/15 to 39% in 2018/19, and that from US investors rose from 2% in 2014/15 to 9% in 2018/19.
- **For HKFE futures and options**, the biggest overseas contributor group was US investors (35% of overseas investor trading, down from 38% in 2014/15). They were followed by Asian investors (32%, up from 11% in 2014/15). The contribution from European investors accounted for 20% (down from 46% in 2014/15).

### Implied contract volume by origin

- **For stock options**, US investors were the only contributor group recorded a positive CAGR (32%) during the period from 2014/15 to 2018/19, compared to a CAGR of -3% in stock options' total overseas investor trading volume in the same period. In the past decade, trading from US investors recorded the highest CAGR of 17%, followed by trading from Asian investors (13%), compared to a CAGR of 8% in the product's total overseas investor trading volume.
- **For HKFE futures and options**, a CAGR of 52% was recorded for the trading volume from Asian investors during the period from 2014/15 to 2018/19, compared to the CAGR of 17% for the total overseas investor trading volume of the HKFE products in aggregate during the same period. This was higher than the CAGR of 15% for the investor trading volume from the US and the negative CAGR of 5% for that from Europe. Nevertheless, the investor trading volume from the US recorded a higher CAGR (18%) than that from Asia (16%) and Europe (8%) in the past decade, compared to the CAGR of 15% for the total overseas investor trading volume of the HKFE products in aggregate.

*(See Figure 14 and Table 5.)*

**Figure 14. Distribution of overseas investor trading volume in derivatives by origin for each market segment (Jul 2018 – Jun 2019)**



( ): Implied contract volume of overseas investor trading in the market segment.

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

<b>Table 5. Distribution of overseas investor trading in derivatives by origin (2011/12 – 2018/19)</b>								
<b>Overall market (All futures and options)</b>								
Origin	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup> (2018/19)		
	2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15 - 2018/19)	CAGR (2009/10 - 2018/19)
US	15.6	18.4	21.1	31.6	32.5	27,142,724	15.2%	18.0%
Europe	52.2	55.0	53.8	46.5	22.8	19,068,069	-4.2%	7.9%
Asia	28.5	22.8	20.0	16.8	32.4	27,054,188	34.8%	15.6%
Others	3.7	3.8	5.0	5.1	12.3	10,252,515	42.5%	26.0%
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	83,517,497	14.4%	14.7%
<b>HKFE futures and options</b>								
Origin	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup> (2018/19)		
	2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15 - 2018/19)	CAGR (2009/10 - 2018/19)
US	18.8	21.9	24.8	38.0	35.0	26,139,614	14.5%	17.8%
Europe	52.9	54.2	55.6	46.3	20.2	15,121,811	-4.9%	8.3%
Asia	25.5	21.4	15.0	11.0	31.7	23,669,919	52.4%	15.8%
Others	2.8	2.6	4.7	4.6	13.1	9,764,884	51.5%	32.0%
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	74,696,228	16.9%	15.5%
<b>Stock options</b>								
Origin	Percentage contribution <sup>(1)</sup>					Implied contract volume <sup>(2)</sup> (2018/19)		
	2011/12	2012/13	2013/14	2014/15	2018/19	No. of contracts	CAGR (2014/15 - 2018/19)	CAGR (2009/10 - 2018/19)
US	4.4	2.2	1.8	2.5	8.5	669,798	32.3%	17.5%
Europe	49.7	59.0	44.6	47.1	47.7	3,753,437	-2.5%	5.9%
Asia	39.0	29.0	46.9	43.3	39.2	3,082,448	-5.2%	13.3%
Others	6.9	9.8	6.7	7.1	4.6	363,117	-12.9%	-2.9%
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	7,868,800	-2.8%	8.2%

Notes:

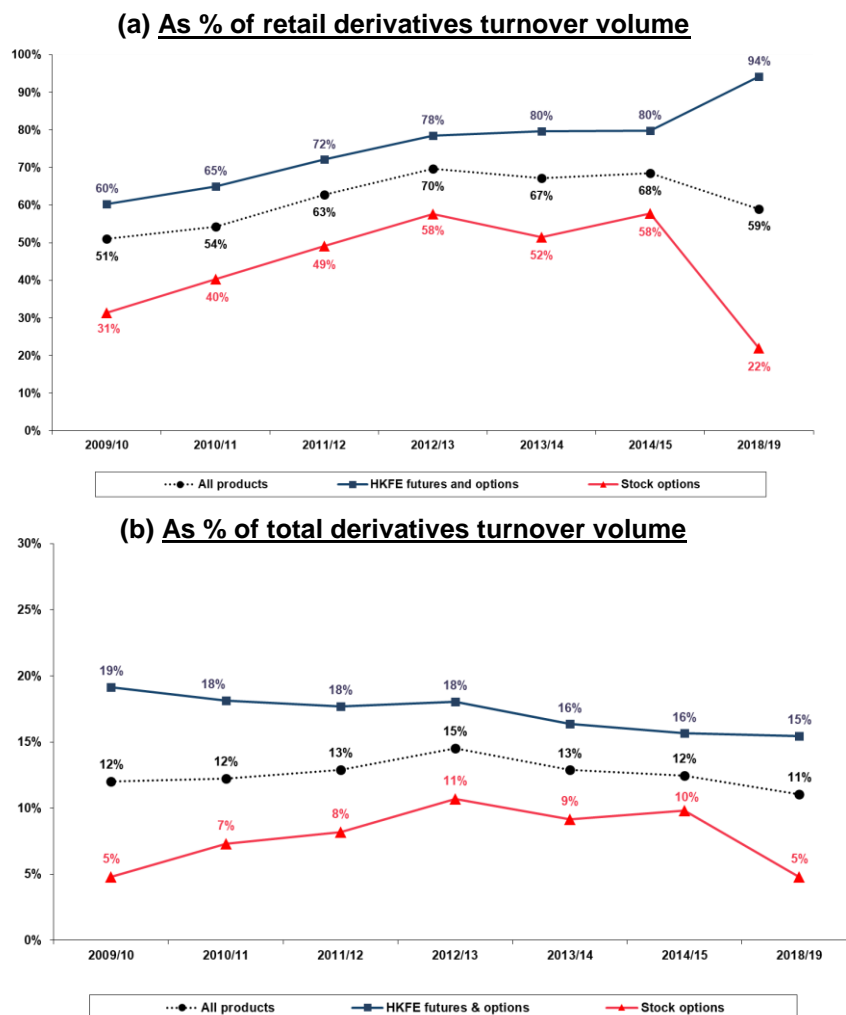
(1) Numbers may not add up to 100% due to rounding.

(2) See glossary for the definition of implied contract volume. The total figure is the actual total contract volume, multiplied by the percentage contribution of overseas investor trading by origin.

### 5. RETAIL ONLINE TRADING

- **Retail online trading** accounted for 59% of total retail investor trading in 2018/19, down from 68% in 2014/15. Its contribution to total market turnover was 11% in 2018/19 (compared to 12% in 2014/15).
- **For stock options**, the use of online trading by retail investors decreased to the lowest level recorded since 2009/10 to 22% in 2018/19 (down from 58% in 2014/15), or 5% of total product volume (compared to 10% in 2014/15).
- **HKFE futures and options**, the use of online trading by retail investors rose to its record high — 94 % of total retail investor trading (up from 80% in 2014/15), or 16% of the products’ total turnover (compared to 15% in 2014/15).
- A total of 103 EPs (down from 116 in 2014/15) or 63% of the responding EPs (vs 54% in 2014/15<sup>9</sup>) offered online trading services to retail derivatives investors (referred to as “online brokers”). Retail online trading accounted for 57% of online brokers’ total turnover in 2018/19 (62% for FEP online brokers and 42% for SOEP online brokers).

**Figure 16. Market share of retail online trading in derivatives trading (2009/10 – 2018/19)**



Note: HKFE futures and options include USD/CNH futures.

<sup>9</sup> The response rate in terms of number of respondents in 2018/19 is much lower than that in 2014/15 (61% vs 89%). This might affect the finding on the percentage of responding EPs offering online trading services to retail derivatives investors. However, since the response rate in terms of turnover volume in 2018/19 is considerably high, the findings in terms of turnover volume is expected to be representative of the market.

<b>Table 6. Statistics on retail online trading in derivatives (2011/12 – 2018/19)</b>					
<b>Overall market (All futures and options)</b>	<b>2011/12</b>	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>	<b>2018/19</b>
<b>Online brokers<sup>(1)</sup></b>					
Total number of online brokers	105	112	122	116	<b>103</b>
- As % of all responding EPs (%)	48%	49%	53%	54%	<b>63%</b>
<b>Online trading</b>					
Total implied contract volume (1-sided) <sup>(5)</sup>	17,354,525	18,125,661	16,266,956	21,828,087	<b>31,378,612</b>
- As % of total market turnover <sup>(3)</sup> (%)	12.9%	14.5%	12.9%	12.4%	<b>11.0%</b>
- As % of total agency (investor) trading (%)	25.8%	28.8%	26.0%	25.4%	<b>18.9%</b>
- As % of total retail investor trading (%)	62.7%	69.6%	67.1%	68.5%	<b>59.0%</b>
- As % of total turnover of online brokers (%)	46.3%	50.9%	46.9%	45.3%	<b>57.3%</b>
<b>HKFE futures and options</b>					
<b>Online brokers<sup>(1)</sup></b>					
Total number of online brokers	88	90	95	89	<b>70</b>
- As % of all responding EPs (%)	59%	59%	63%	64%	<b>65%</b>
<b>Online trading</b>					
Total implied contract volume (1-sided) <sup>(2)</sup>	11,798,691	11,761,364	10,705,055	12,378,137	<b>25,686,120</b>
- As % of total product turnover <sup>(4)</sup> (%)	17.7%	18.0%	16.3%	15.6%	<b>15.5%</b>
- As % of total product agency (investor) trading (%)	25.4%	26.1%	23.8%	21.4%	<b>20.1%</b>
- As % of total product retail investor trading (%)	72.1%	78.5%	79.6%	79.8%	<b>94.2%</b>
- As % of total product turnover of online brokers (%)	65.6%	72.1%	67.9%	70.5%	<b>62.4%</b>
<b>Stock options</b>					
<b>Online brokers<sup>(1)</sup></b>					
Total number of online brokers	17	22	27	27	<b>33</b>
- As % of all responding EPs (%)	25%	29%	35%	36%	<b>60%</b>
<b>Online trading</b>					
Total implied contract volume (1-sided) <sup>(2)</sup>	5,555,833	6,364,296	5,561,901	9,449,950	<b>5,692,492</b>
- As % of total product turnover <sup>(4)</sup> (%)	8.2%	10.7%	9.1%	9.8%	<b>4.8%</b>
- As % of total product agency (investor) trading (%)	26.6%	35.4%	31.6%	33.7%	<b>14.8%</b>
- As % of total product retail investor trading (%)	49.1%	57.6%	51.5%	57.7%	<b>22.0%</b>
- As % of total product turnover of online brokers (%)	28.7%	33.2%	29.5%	30.9%	<b>42.1%</b>

## Notes:

- (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.
- (3) Total 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.
- (5) 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.
- (6) HKFE futures and options include USD/CNH futures.

**GLOSSARY**

<b>Hedging</b>	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.
<b>Pure trading</b>	Trading for potential profit in anticipation of a price movement in either the short or long term, but not for hedging or arbitrage purpose.
<b>Arbitrage</b>	Trading to take riskless or near riskless profit from price differentials in related markets.
<b>EP principal trading</b>	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.
<b>Agency trading</b>	Trading on behalf of the participant firm's clients, including client trading channelled from the firm's parent or sister companies.
<b>Market maker trading</b>	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.
<b>EP proprietary trading</b>	Trading on the participant firm's own account but not as a market maker.
<b>Individual/Retail investors</b>	Investors who trade on their personal account.
<b>Institutional investors</b>	Investors who are not individual/retail investors.
<b>Local investors</b>	Individual/Retail investors residing in Hong Kong or institutional investors operating in Hong Kong — Hong Kong as the source of funds.
<b>Online brokers</b>	EPs who offer online derivatives trading service to individual/retail investors.
<b>Overseas investors</b>	Individual/Retail investors residing outside Hong Kong or institutional investors operating outside Hong Kong — overseas as the source of funds.
<b>Retail online trading</b>	Trading originating from orders entered directly by individual/retail investors and channelled to the brokers via electronic media (e.g. the Internet).
<b>Implied contract volume</b>	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.
<b>Notional value</b>	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.

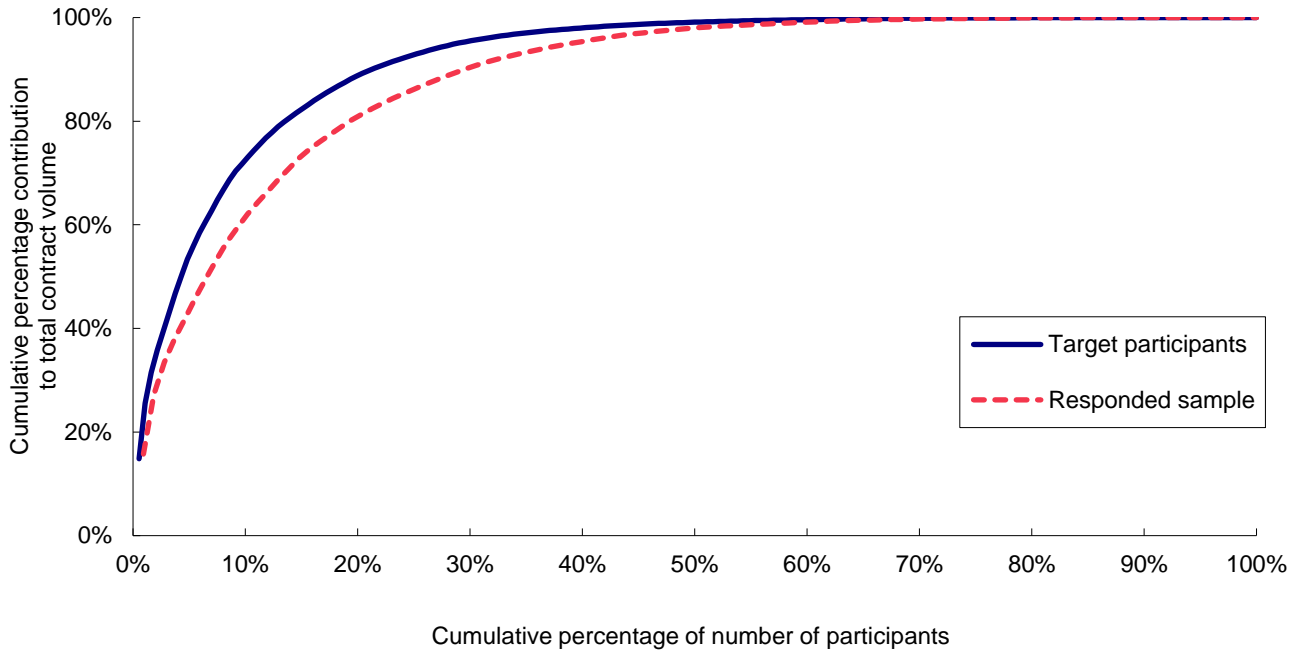


**APPENDIX 1. RESPONSE RATE**

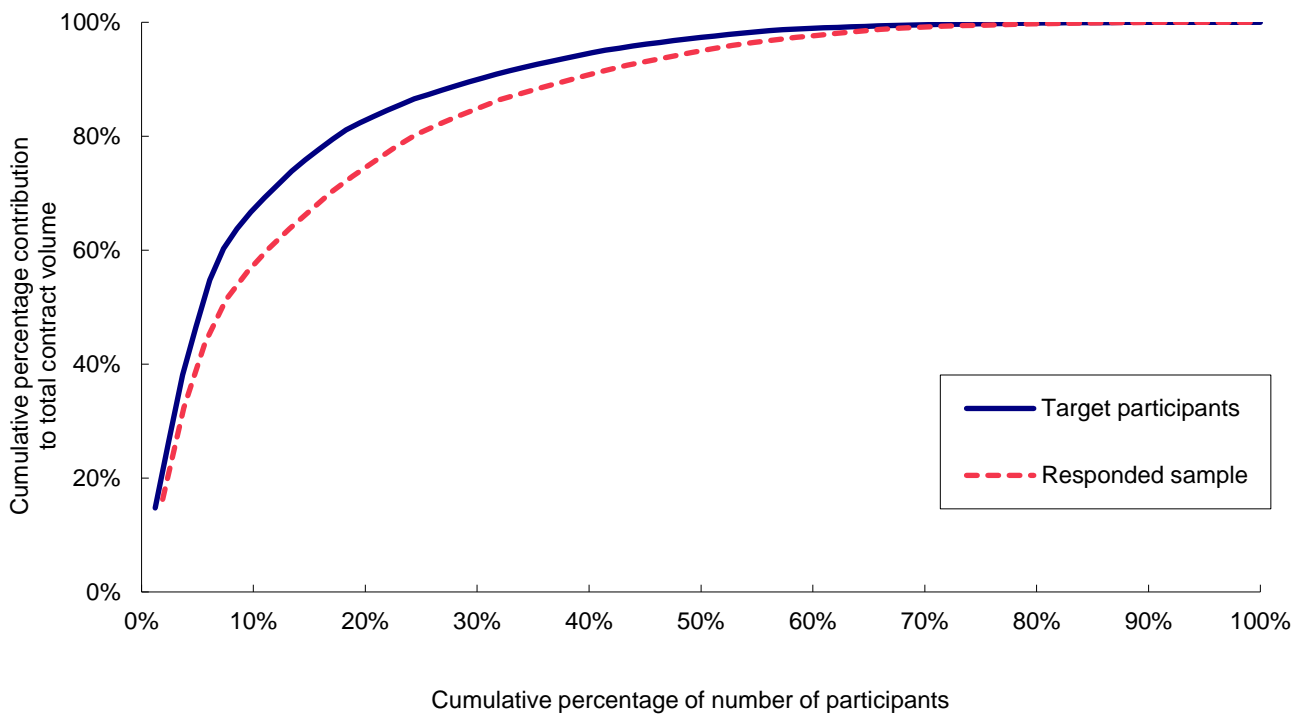
<b>Exchange Participants</b>	<b>Target population</b>	<b>Responded participants</b>	<b>Response rate</b>	<b>% share of turnover in target population</b>
<b>Futures EPs</b>	186	108	58%	94%
<b>Stock Options EPs</b>	82	55	67%	95%
<b>All Participants</b>	<b>268</b>	<b>163</b>	<b>61%</b>	<b>95%</b>

**APPENDIX 2. REPRESENTATIVENESS OF THE RESPONDED SAMPLE RELATIVE TO TARGET RESPONDENTS**

**(a) Futures Exchange Participants (Jul 2018 – Jun 2019)**



**(b) Stock Options Exchange Participants (Jul 2018 – Jun 2019)**



## APPENDIX 3. CONTRACT SIZE AND NOTIONAL VALUE OF PRODUCTS UNDER STUDY

Product	Contract multiplier (HK\$ per index point)	Notional value per contract <sup>(1)</sup> (HK\$) (as at end-June 2019)	Turnover in notional value during the study period		
			(HK\$m)	% of total of equity products	% of total of all products
<b>Equity futures and options</b>					
HSI futures	50	1,427,131	83,056,410	56.95%	56.32%
HSI options	50	1,427,131	17,758,672	12.18%	12.04%
Mini-HSI futures	10	285,426	7,000,266	4.80%	4.75%
Mini-HSI options	10	285,426	845,595	0.58%	0.57%
HSCEI futures	50	544,093	20,438,992	14.01%	13.86%
HSCEI options	50	544,093	12,964,994	8.89%	8.79%
Mini-HSCEI futures	10	108,819	491,482	0.34%	0.33%
<b>Index futures &amp; options</b>	—	—	<b>142,556,410</b>	<b>97.75%</b>	<b>96.67%</b>
Stock options <sup>(2) (3)</sup>	—	27,653	3,280,575	2.25%	2.22%
<b>All equity products</b>			<b>145,836,986</b>	<b>100.00%</b>	<b>98.89%</b>
<b>Currency futures</b>	<b>Contract size</b>				
USD/CNH futures <sup>(4)</sup>	USD 100,000	781,200	1,634,050		1.11%
<b>All products under study</b>			<b>147,471,036</b>		<b>100.00%</b>

## Notes:

(1) See glossary for the definition of notional value.

(2) The contract size for a stock options class is usually one board lot of the underlying stock except for certain option classes with contract size more than one board lot; different stocks may have different board lot sizes.

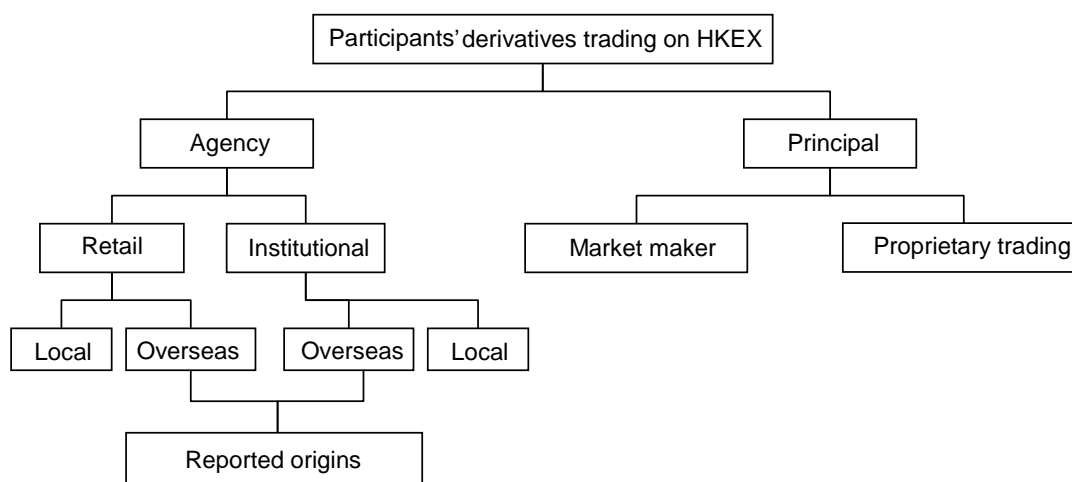
(3) The notional value per contract for stock options is the simple average of the per-contract notional values of all the stock option classes traded during the study period (ranging from HK\$1,525 to HK\$132,500), based on the underlying stocks' closing prices as at end-June 2019 or, if a stock options class was delisted prior to the end of the study period, the stock closing price on the last trading day of the stock options class.

(4) The HKD/USD exchange rate as of end-June 2019 (US\$1 = HK\$7.812), sourced from the Hong Kong Monetary Authority's website, was used to calculate the notional value per contract of USD/CNH futures.

Remark: Notional values are difficult to compile in practice as a calculation of notional values involves the market price of the underlying assets. As the market price of the underlying asset varies, a contract traded at one time may differ in notional value from the same contract traded at another time. For simplicity, the closing price of the underlying asset at a particular period end is used to calculate the notional value during the period.

## APPENDIX 4. SURVEY METHODOLOGY

### (1) Classification of Exchange Participants' derivatives trading on HKEX



### (2) Target population

Exchange participation in the HKEX derivatives market consists of Futures Exchange Participants (FEPs) and Stock Options Exchange Participants (SOEPs). The target population of the survey included all FEPs and SOEPs who had trading during the study period, excluding those who had ceased to be trading participants before the start of fieldwork in July 2019. The target respondents were all corporations.

### (3) 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 2018 to June 2019.
- 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 and stock options. These products together contributed 99% of the total volume of the HKEX derivatives market during the study period.
- An on-line survey tool was adopted in the 2018/19 Survey. Target respondents were invited to complete the survey questionnaire online, or to complete the questionnaire offline (a PDF version of the questionnaire was provided on request). In the 2018/19 Survey, the majority of the respondents completed the questionnaire on-line while the rest were collected in form of electronic copies of the completed questionnaires by email. In the questionnaire, the target respondents were requested to provide an estimated percentage breakdown of their contract volume for each of the product under study during the study period in accordance with the prescribed classification. Respondents were reminded that their answers should be based on their execution turnover.
- Close telephone/email follow-up was done to ensure a high response rate, especially for Participants which were top-ranked in the target population by contract volume.

- The methodology to arrive at the relative contribution of each type of trade to the total market volume has been improved since 2008/09 by applying a weighting factor by product under study to align the responded sample with the actual market turnover composition by product. Each Participant's answers in percentage terms were first multiplied by its actual contract volume by product during the study period obtained internally to arrive at its volume in each respective trade type for each product, based on which the relative contribution of each trade type (aggregate of all responding Participants) for each product was calculated. The weighting factors by product were then applied to the aggregate trading volume of all responding Participants by trade type in the respective product under study before calculating the relative contribution of each trade type to the total market.
- For statistics on online trading, the total reported online trading volume of each of the two product segments — HKFE futures and options, and stock options — was first calculated. This was done by aggregating all responding Participants' figures (for FEPs and SOEPs respectively) — each was calculated by multiplying the reported online trading percentage with that Participant's actual contract volume in the product segment. The proportion of the total reported online trading volume in the product segment to the responded sample's total trading volume in the product segment was computed (this approach was adopted since the 2008/09 Survey rather than using the proportion to the target population's total as in prior surveys). The implied online trading volume was then calculated by multiplying this proportion by the actual market turnover in each of the product segments during the study period. The total implied online trading volume for the market was calculated by summing up the respective figures for the two product segments (which had different response rates from FEPs and SOEPs respectively; in surveys prior to 2009/10, no such weighting was adopted). The corresponding figures for the overall market in the previous surveys were revised accordingly. The proportion of online trading volume to a specific trade type (agency or retail agency) was calculated as the ratio of the implied online trading volume to the implied contract volume of that trade type.

#### (4) 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.

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