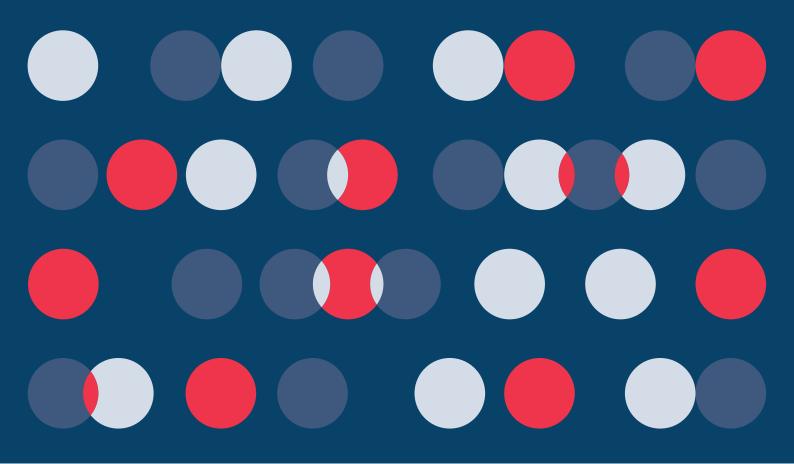
July 2019



## CASH MARKET TRANSACTION SURVEY 2018 (FULL REPORT)



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# INTRODUCTION

The Cash Market Transaction Survey ("CMTS") has been conducted regularly since 1991 to study the trading composition of the Exchange Participants ("EPs") of the Stock Exchange of Hong Kong Limited ("SEHK"). The main objective of the survey is to understand the relative contribution of trading value in the HKEX securities market, including the Main Board and GEM, by investor type. The market share of online trading is also assessed.

The last CMTS was carried out for the year ended 31 December 2016.

The 2018 survey covered EPs' transactions on both the Main Board and GEM from January to December 2018 (referred to as the 2018 study period)<sup>1</sup>. The survey included Southbound trading through the specialised EPs designated for Shanghai-Hong Kong Stock Connect (launched in 2014) and Shenzhen-Hong Kong Stock Connect launched in December 2016 (collectively referred to as the "Stock Connect" scheme) in the data analysis as trading originated from investors in Mainland China. The designated EPs for the Stock Connect scheme are referred to as the "Southbound EPs".

HKEX Cash Market Summary (2016 & 2018)										
Annual statistics (Main Board and GEM)	2016	2018	% change							
Total turnover value (HK\$ million)	16,396,425	26,422,762	61%							
No. of trading days	245	246	Not Applicable							
Average daily turnover value (HK\$ million)	66,924	107,410	60%							
Total Shanghai-Hong Kong Stock Connect Southbound buy & sell turnover value (HK\$ million)	826,776	1,822,098	120%							
No. of trading days	228	223	Not Applicable							
Average daily turnover value (HK\$ million)	3,626	8,171	125%							
Total Shenzhen-Hong Kong Stock Connect Southbound buy & sell turnover value (HK\$ million)*	9,164	1,011,556	Not Applicable							
No. of trading days*	18	223	Not Applicable							
Average daily turnover value (HK\$ million)	509	4,536	791%							
% share of Stock Connect Southbound trading (one-sided) in total market turnover	2.5%	5.4%								

\* Shenzhen-Hong Kong Stock Connect was launched on 5 December 2016, so that its total Southbound buy and sell turnover figure in 2016 was only the trading value over 18 trading days, in comparison with the whole-year figure in 2018.

<sup>&</sup>lt;sup>1</sup> No survey was conducted for the year 2017. The previous survey covered the period from January to December 2016 (referred to as the 2016 study period). Surveys prior to 2016 covered an annual period from October in a year to September in the following year. For the survey covering the period from October 2014 to September 2015, the study period is referred to as the 2014/15 study period, similarly for other prior surveys.

## **KEY FINDINGS**

#### Trading value by investor type

- (1) All types of trade recorded an increase in turnover value in 2018 relative to 2016 (based on implied value of trading<sup>2</sup>).
- (2) Local (Hong Kong) investors' turnover value increased by 34% compared with 2016 and its contribution to total market turnover was 30% (36% in 2016). Overseas investors' turnover value increased by 65% compared with 2016 and its contribution to the total market turnover was 41% (40% in 2016).
- (3) **Overseas investor trading derived mainly from institutions** 35% of the total market turnover (33% in 2016), compared with 6% from overseas retail investors (7% in 2016).
- (4) **Local institutional investors contributed 20% of the total market turnover** (around the same level as in 2016), compared to 10% from local retail investors (16% in 2016).
- (5) Institutional investors (local and overseas) contributed 55% to total market turnover (53% in 2016) while the contribution from retail investors (local and overseas) was 16% (23% in 2016). The balance of 29% was taken up by EP principal trading, the highest level reached in record.
- (6) Over the past ten years<sup>3</sup>, EP principal trading value grew at a compound annual growth rate ("CAGR") of 22%, which was the highest among all types of trade, exceeding the CAGR of the total market turnover value (7%). Overseas retail investor trading was the only other type of trade that had a CAGR (11%) exceeding that of the total market turnover value, owing probably to the contribution by Mainland retail investors.

#### Overseas investor trading by origin

- (7) Overseas investor trading came from over 50 separate jurisdictions.
- (8) In 2018, Mainland China investors surpassed UK investors to become the largest contributor group, with a contribution of 28% of overseas investor trading and 12% of total market turnover (22% and 9% respectively in 2016). US investors took over UK to become the second, capturing 23% of overseas investor trading and 10% of total market turnover (20% and 8% respectively in 2016). UK investors slipped from the top to the third place capturing 17% of overseas investor trading and 7% of total market turnover (23% and 9% respectively in 2016).
- (9) In 2018, the contribution from Continental European investors decreased to 10% of overseas investor trading (13% in 2016) and 4% of total market turnover (5% in 2016).
- (10) The contribution from Asian investors, in aggregate, increased to 42% of total overseas investor trading in 2018 from 36% in 2016 while the contribution made by European investors (including UK investors) in the year decreased to 27% from 36% in 2016. Following Mainland

<sup>&</sup>lt;sup>2</sup> See Glossary for definition.

The period refers to the 10-year period from the 2008/09 Survey to the 2018 Survey, albeit no survey was conducted for the year 2017. The same reference applies to the quotation of "past ten years" in the rest of the report.

China investors, Singaporean investors continued to be the second largest contributor group in Asia although with a slight decrease from the previous survey year — 7% of overseas investor trading and 3% of total market turnover.

- (11) The majority of investor trading activities from the US, UK, as well as Continental Europe (at least 86% or more), Singapore (at least 82%), and Japan and Australia (both at least 79%) were contributed by institutional investors. Notably, the contribution to the majority of trading activities from Mainland China investors<sup>4</sup> had shifted from retail investors in 2016 (at least 62% in 2016 compared to at least 28% in 2018) to institutional investors (at least 56% in 2018 compared to at least 23% in 2016).
- (12) The total implied value of overseas investor trading grew by 65% in 2018 relative to 2016. In comparison, trading from Mainland China investors grew strongly by 117% and that from US investors grew by 90%. On the contrary, trading from UK investors increased by a relatively moderate degree of 23% and that from Continental European investors increased by 26%. Australia, which contributed only 2% of total overseas investor trading, was the only specified overseas origin with a decline in trading value (by 25%) in 2018 relative to 2016.
- (13) Over the past ten years, the overall investor trading value from Asia had a CAGR of 13% compared to the CAGR of 7% in the total overseas investor trading value. In particular, trading from Mainland China and Taiwan investors recorded a CAGR of 17% and 12% respectively, while the CAGRs of those from the US, UK and Continental European investors were below that in the total overseas investor trading value.

#### Retail online trading

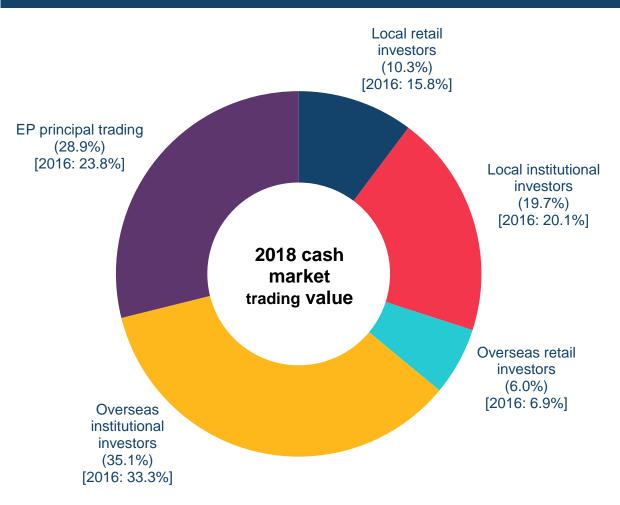
(14) In 2018, retail online trading accounted for 61% of total retail investor trading compared to 47% in 2016, and 10% of total market turnover (slightly down from 11% in 2016). In 2018, the implied value of online trading increased by 49% relative to 2016 (compared to 61% for the total market turnover value and 15% for retail investor trading value in the same period).

<sup>&</sup>lt;sup>4</sup> Excluding Southbound trading under Stock Connect.

## **FIGURES AND TABLES**

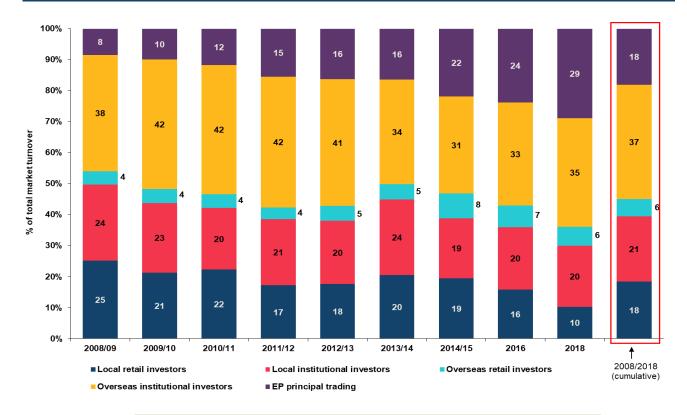
#### 1. Distribution of market trading value by investor type

#### Figure 1. Distribution of cash market trading value by investor type (2018)



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

	2014/15	2016	201
Type of trade	%	%	201
	70	70	
All trading			
nvestor trading	78.13	76.21	71.1
EP principal trading	21.87	23.79	28.8
	100.00	100.00	100.0
nvestor trading			
Retail	35.16	29.89	22.8
nstitutional	64.84	70.11	77.
	100.00	100.00	100.
nvestor trading			
₋ocal	49.72	47.22	42.
Overseas	50.28	52.78	57.8
	100.00	100.00	100.
Retail investor trading			
_ocal	70.96	69.56	62.9
Overseas	29.04	30.44	37.
	100.00	100.00	100.0
nstitutional investor trading			
_ocal	38.21	37.69	35.9
Overseas	61.79	62.31	64.0
	100.00	100.00	100.0
_ocal investor trading			
Retail	50.18	44.04	34.2
nstitutional	49.82	55.96	65.3
······	100.00	100.00	100.
Overseas investor trading			
Retail	20.31	17.24	14.
nstitutional	79.69	82.76	85.3
	100.00	100.00	100.0



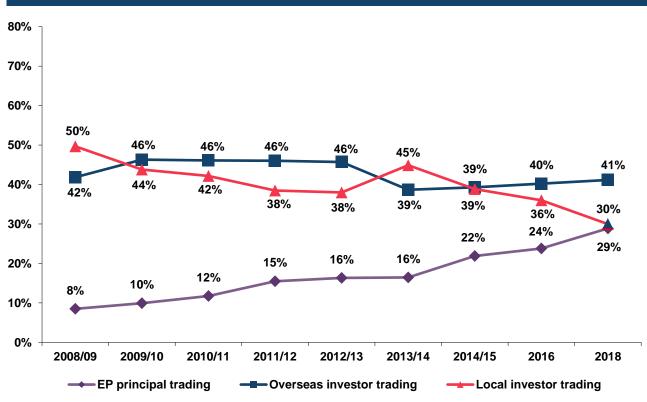
# Figure 2. 10-year trend in the distribution of cash market trading value by investor type (2008/09 - 2018)

Type of trade	Distribution of cash market trading by investor type (%)									
Type of trade	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2016	2018	market turnover (%)
EP principal trading	8.49	9.92	11.73	15.49	16.33	16.43	21.87	23.79	28.88	18.10
Overseas investor trading	41.84	46.30	46.09	46.03	45.69	38.67	39.28	40.23	41.15	42.47
Retail	4.32	4.50	4.43	3.87	4.85	4.91	7.98	6.93	6.03	5.55
Institutional	37.52	41.80	41.66	42.16	40.84	33.75	31.30	33.29	35.12	36.92
Local investor trading	49.66	43.78	42.18	38.48	37.99	44.90	38.85	35.99	29.97	39.43
Retail	25.20	21.27	22.25	17.20	17.62	20.49	19.49	15.85	10.25	18.37
Institutional	24.46	22.51	19.93	21.28	20.37	24.41	19.36	20.14	19.72	21.06
Retail investor trading	29.52	25.77	26.68	21.07	22.47	25.41	27.47	22.78	16.28	23.92
Institutional investor trading	61.99	64.31	61.58	63.44	61.21	58.16	50.66	53.43	54.84	57.98

Notes:

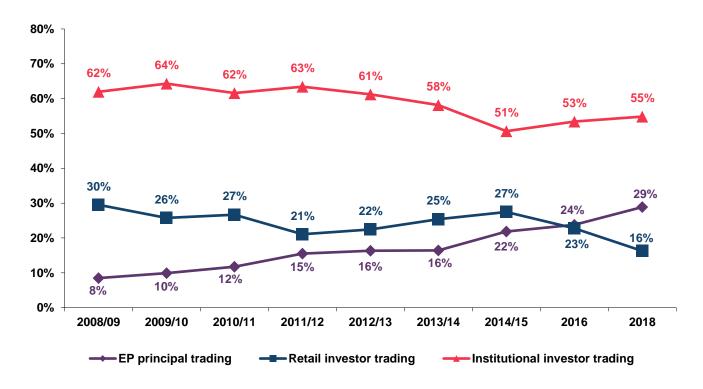
(1) No survey was conducted for the year 2017 such that the cumulative figures exclude the year 2017.

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



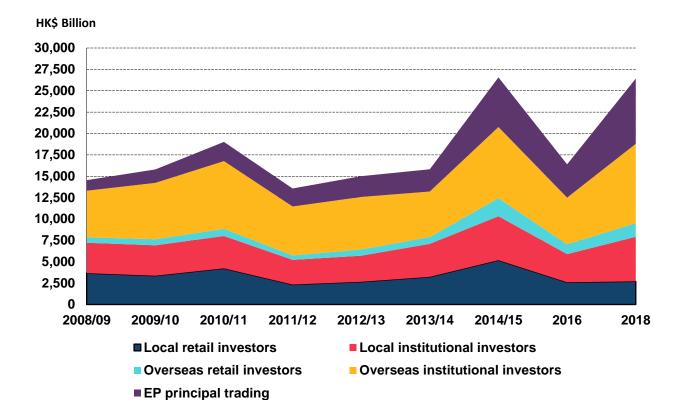
# Figure 3. Distribution of cash market trading value by investor type (local vs overseas) (2008/09 – 2018)





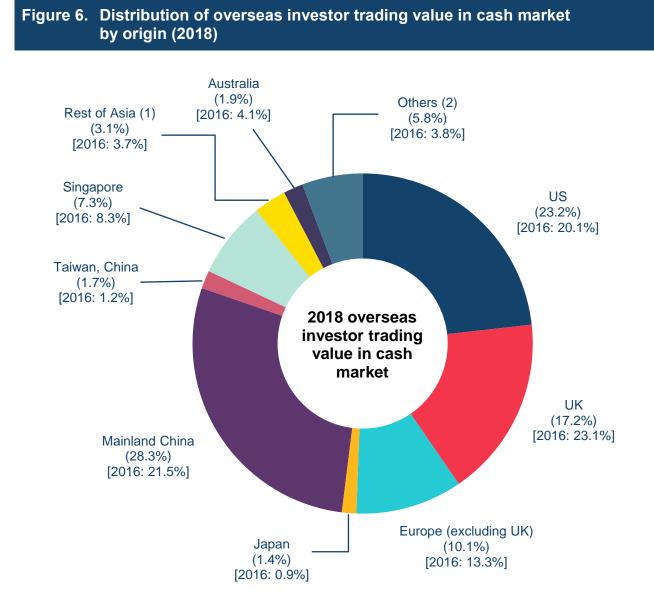
Note: No survey was conducted for the year 2017. Numbers may not add up to 100% due to rounding.

# Figure 5. Implied value of cash market trading by investor type (2008/09 – 2018)



Type of trade		Period-on-period % change										
	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2016	2018	2018 CAGR		
EP principal trading	-11.68	26.87	42.32	-5.78	16.69	5.97	123.59	-32.87	95.64	22.42		
Overseas investor trading	-35.79	20.19	19.79	-28.74	9.92	-10.91	70.69	-36.79	64.84	6.66		
Retail	-15.04	13.06	18.57	-37.74	38.86	6.63	172.84	-46.35	40.16	10.89		
Institutional	-37.54	21.01	19.92	-27.78	7.26	-12.99	55.83	-34.36	69.98	6.08		
Local investor trading	-39.65	-4.25	15.92	-34.91	9.33	24.43	45.38	-42.83	34.23	1.03		
Retail	-38.02	-8.30	25.85	-44.85	13.45	22.44	59.83	-49.83	4.24	-3.30		
Institutional	-41.24	-0.07	6.54	-23.81	6.01	26.15	33.24	-35.79	57.84	4.33		
Retail investor trading	-35.46	-5.17	24.58	-43.67	18.12	19.03	81.68	-48.82	15.17	0.02		
Institutional investor trading	-39.06	12.69	15.23	-26.50	6.84	0.03	46.35	-34.90	65.40	5.42		
Total	-36.33	8.62	20.33		10.74	5.27		-38.28	61.15	6.86		

Note: No survey was conducted for the year 2017.



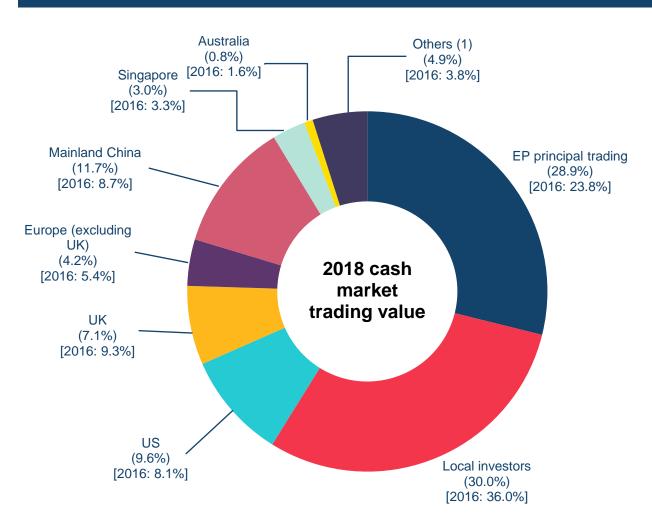
#### 2. Distribution of overseas investor trading value by origin

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

#### Remarks:

- (1) In 2018, reported origins in "Rest of Asia" were Bangladesh, Brunei, Cambodia, India, Indonesia, Kazakhstan, Macau, Malaysia, Mongolia, Philippines, South Korea, Thailand and Vietnam (a total of 13 origins).
- (2) In 2018, reported origins in "Others" included Anguilla, Antigua and Barbuda, Bahamas, Bahrain, Belize, Bermuda, Bolivia, Brazil, British Virgin Islands, Canada, Cayman Islands, Chile, Costa Rica, Cyprus, Grenada, Isle of Man, Israel, Jordan, Kenya, Kuwait, Liberia, Mauritius, Mexico, New Zealand, Oman, Panama, Paraguay, Qatar, Samoa, Saudi Arabia, Seychelles, South Africa, Saint Vincent and the Grenadines, St. Kitts & Nevis, Turkey, United Arab Emirates, Uruguay and Vanuatu (a total of 38 origins).

# Figure 7. Distribution of cash market trading value by local and overseas origin (2018)



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

#### Remark:

(1) Others comprise investors from Japan, Taiwan of China, Rest of Asia and Rest of the World<sup>5</sup>.

<sup>&</sup>lt;sup>5</sup> Refer to remarks of Figure 6 on the previous page for the full list of countries included in the Rest of Asia and the Rest of the World ("Others").

# Table 2.Minimum proportion of retail/institutional investor trading from each<br/>overseas origin (2016 & 2018)

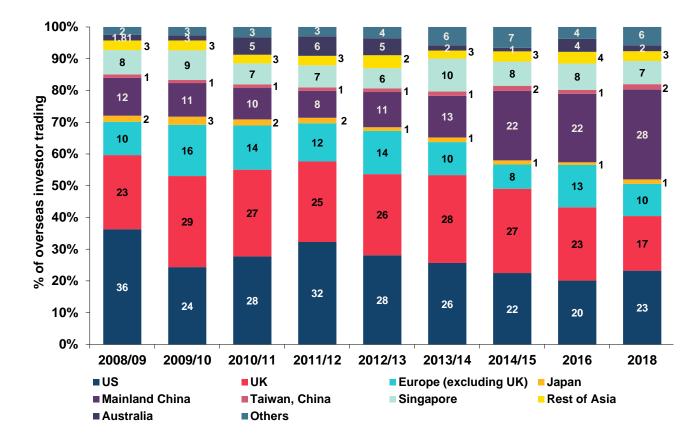
	Minimum proportion of the trading coming from								
Origin	Retail ir	vestors	Institutional investors						
	2016	2018	2016	2018					
US	0.0%	0.1%	88.1%	95.3%					
UK	0.0%	0.1%	88.4%	92.8%					
Europe (excl. UK)	0.0%	0.0%	91.5%	85.6%					
Japan	2.5%	0.0%	42.3%	78.5%					
Mainland China	62.1%	28.0%	23.2%	55.7%					
Taiwan, China	4.6%	9.1%	29.4%	40.6%					
Singapore	0.2%	1.7%	79.4%	82.5%					
Australia	0.2%	0.3%	91.8%	78.6%					

Notes:

(1) The minimum proportions were deduced figures from the responses. The difference between 100% and the summation of the two figures for an origin represents the proportion of trading from that origin which could come from either retail or institutional investors.

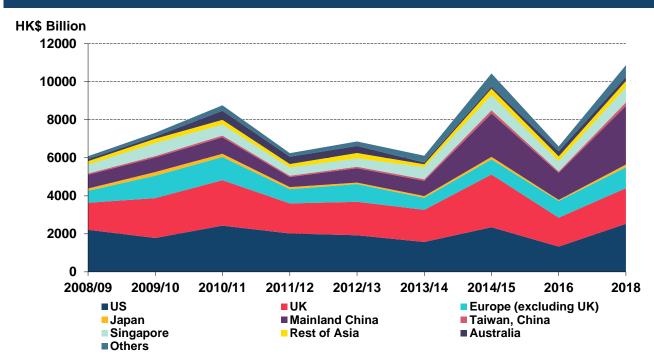
(2) The Southbound EPs were excluded from the analysis.

# Figure 8. Distribution of overseas investor trading in cash market by origin over the past 10 years (2008/09 – 2018)



Overseas origin		Dis	stribution	of oversea	as investo	r trading b	oy origin (	%)	
Overseas origin	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2016	2018
US	36.31	24.37	27.75	32.27	28.07	25.65	22.48	20.12	23.23
Europe	33.84	44.81	41.23	37.41	39.22	38.10	34.22	36.42	27.36
UK	23.35	28.68	27.32	25.35	25.60	27.68	26.57	23.10	17.22
Europe (excluding UK)	10.49	16.13	13.91	12.05	13.62	10.42	7.64	13.31	10.15
Asia	25.58	26.56	22.27	21.23	23.82	28.81	35.64	35.61	41.78
Japan	1.92	2.58	1.90	1.74	1.12	1.45	1.27	0.86	1.37
Mainland China	11.86	10.55	9.92	8.49	11.12	13.11	21.89	21.55	28.32
Taiwan, China	1.11	1.03	1.09	1.08	1.10	1.37	1.63	1.22	1.72
Singapore	7.69	9.28	6.63	6.97	6.40	10.37	7.61	8.31	7.30
Rest of Asia	3.00	3.11	2.73	2.95	4.09	2.51	3.24	3.67	3.07
Australia	1.81	1.60	5.47	6.15	5.35	1.65	1.09	4.08	1.86
Others	2.46	2.66	3.28	2.95	3.54	5.79	6.57	3.77	5.77
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Notes: No survey was conducted for the year 2017. Numbers may not add up to 100% due to rounding.



#### Figure 9. Implied value of overseas investor trading in cash market by origin (2008/09 - 2018)

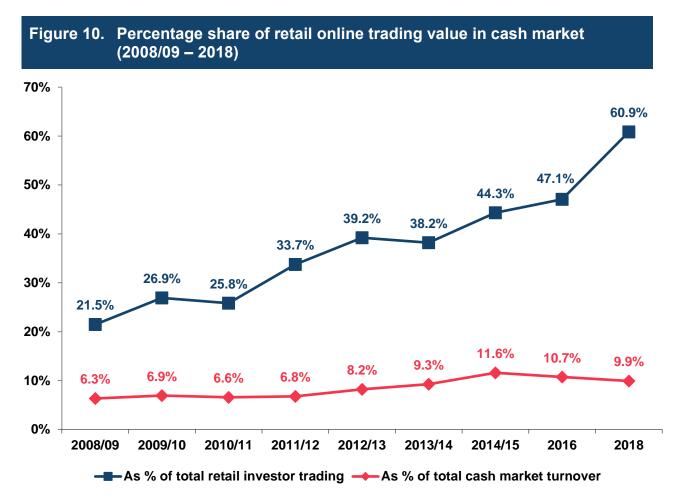
Notes: The implied value of trading from a particular origin is determined by first calculating the implied overseas agency trading value during the study period of the survey, and then multiplying it by the percentage contribution to overseas agency trading by that origin as obtained from the survey.

Origin			Pe	eriod-on	-period %	% change	;			2008/09 - 2018
Origin	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2016	2018	CAGR
US	-33.62	-19.36	36.41	-17.13	-4.38	-18.59	49.60	-43.43	90.33	1.49
Europe	-43.58	59.19	10.20	-35.34	15.24	-13.45	53.30	-32.72	23.85	4.17
UK	-33.25	47.65	14.08	-33.86	11.00	-3.69	63.89	-45.04	22.83	3.11
Europe (excluding UK)	-58.04	84.86	3.29	-38.25	24.16	-31.80	25.17	10.11	25.61	6.27
Asia	-23.67	24.78	0.47	-32.09	23.35	7.74	111.18	-36.85	93.39	12.64
Japan	-63.67	61.76	-11.63	-35.04	-29.22	15.48	49.06	-56.91	162.11	2.76
Mainland China	-1.67	6.89	12.57	-38.97	43.89	5.03	185.03	-37.77	116.64	17.49
Taiwan, China	-20.58	12.29	26.57	-29.57	11.90	11.24	103.23	-52.76	131.97	12.01
Singapore	-34.52	44.96	-14.36	-25.13	0.85	44.42	25.36	-31.04	44.79	6.03
Rest of Asia	-0.93	24.78	5.08	-22.94	52.54	-45.27	120.17	-28.47	37.88	6.96
Australia	-59.26	6.39	309.19	-19.83	-4.36	-72.47	12.79	136.11	-24.84	7.01
Others	-20.48	29.91	47.67	-36.05	31.90	45.86	93.71	-63.71	152.13	17.24
Total	-35.79	20.19	19.79	-28.74	9.92	-10.91	70.69	-36.79	64.84	6.66

Notes:

(1) The substantial growth in trading from Australia in 2010/11 was due to a change in reporting by an EP, who reported a substantial contribution to its trading from its sister company in Australia in 2010/11 while in past surveys; this kind of trading carried out for its corporate group was reported as its principal trading.

(2) The significant growth of the implied trading value from Australia investors in 2016 was mainly due to the inclusion in the 2016 responded sample, but not in the 2014/15 responded sample, of an EP which had a large client base in Australia. Nevertheless, due to the relatively low weighting by turnover of this particular EP in the target population, the difference would have immaterial impact to survey findings on the overall pattern of overseas investor trading in the cash market.



#### 3. Retail online trading

Table 3. Statistics on retail online trading in cash market (2012/13 - 2018)										
	2012/13	2013/14	2014/15	2016	2018					
Number of EPs completed and returned the questionnaires	457	433	414	446	286					
Online brokers										
Number of online brokers	250	247	240	274	202					
- As % of all responding EPs	54.7%	57.0%	58.0%	61.4%	70.6%					
Retail online trading										
Total implied trading value (HK\$million)	1,235,360	1,465,223	3,079,997	1,758,013	2,617,839					
- As % of total market turnover	8.2%	9.3%	11.6%	10.7%	9.9%					
- As % of all agency (investor) trading	9.9%	11.2%	15.1%	14.1%	13.9%					
- As % of total retail investor trading	39.2%	38.2%	44.3%	47.1%	60.9%					
- As % of total turnover of online brokers	27.6%	28.9%	33.0%	30.4%	34.9%					

Note: No survey was conducted for the year 2017. The Southbound EPs for Stock Connect trading were regarded as non-online brokers in the above analysis.

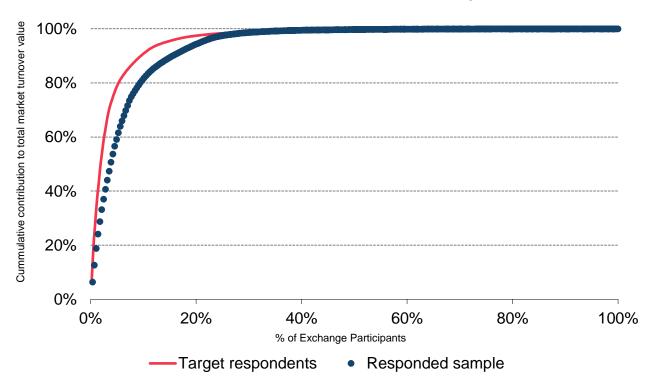
Agency trading / Investor trading	Trading on behalf of the participant firm's client investors, including client trading channelled from the firm's parent or sister companies.
Implied value of trading	The implied value of trading for a particular type of trade is calculated by multiplying the percentage contribution to market turnover by that type of trade as obtained from the survey by the actual overall market turnover during the study period.
	The implied value of trading from a particular overseas origin is calculated by first calculating the implied overseas agency trading value during the study period, and then multiplying it by the percentage contribution to overseas agency trading by that origin as obtained from the survey.
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, with Hong Kong as the source of funds.
Online brokers	Exchange Participants of SEHK who offer online trading service to individual/retail investors.
Overseas investors	Individual/retail investors residing outside Hong Kong or institutional investors operating outside Hong Kong, with the source of funds overseas.
Principal trading	Trading on the participant firm's own account.
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).

## APPENDIX 1. RESPONSE RATE AND REPRESENTATIVENESS OF THE RESPONDED SAMPLE

We contacted a total of 627 EPs in the target population to participate in the survey. Out of the 627 questionnaires sent, 501 questionnaires were completed and received, including 215 respondents without identity, representing an overall response rate of 80% by number in the target population. For the purpose of complete and accurate analysis, only the 286 responses with identity would be included in the data analysis, as presented in the table below.

Participant	<b>-</b>	<b>D</b>	Respons	e rate
group	Target population	Responded sample	By number	By turnover value
Category A brokers <sup>6</sup>	14	14	100.0%	100.0%
Category B brokers <sup>7</sup>	51	50	98.0%	97.4%
Category C brokers <sup>8</sup>	562	222	39.5%	41.3%
Total	627	286	45.6%	94.0%

Representativeness of the responded sample vis-à-vis the target population of EPs<sup>9</sup>



Remark: The lines in the chart represent the degree of concentration of market turnover by EPs in the target population and in the responded sample respectively. The closer the line of the responded sample to that of the target population, the more representative the responded sample is.

<sup>&</sup>lt;sup>6</sup> Category A brokers' market share ranked from position 1 to 14, for the year 2018.

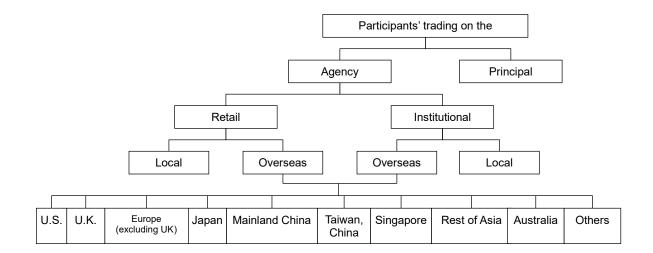
<sup>&</sup>lt;sup>7</sup> Category B brokers' market share ranked from position 15 to 65, for the year 2018.

<sup>&</sup>lt;sup>8</sup> Category C brokers' market share ranked from position beyond 65, for the year 2018.

<sup>&</sup>lt;sup>9</sup> Excluding the Southbound EPs.

## APPENDIX 2. SURVEY DESIGN AND METHODOLOGY

## (1) Classification of Exchange Participants' trading on SEHK



#### (2) Target population

The target population included all Exchange Participants ("EPs") of SEHK who had conducted trading in the cash market during the study period (the year 2018).

The specialised EPs designated for Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect Southbound trading (referred to as the "Southbound EPs") — China Investment Information Services Limited for the former and China Innovation Market Service Company Limited for the latter — were excluded from the survey sample. All of the trading recorded for these EPs was included in the subsequent data analysis as trading from Mainland China investors.

## (3) Methodology

The study period is from January to December 2018.

The survey sample consisted of all EPs in the target population. An online survey tool was used for the first time in the 2018 Survey and, through email correspondence, EPs were asked to complete the questionnaire and submit their answers online. For EPs whose valid email address could not be tracked, survey questionnaires were mailed to them directly. Close telephone/email follow-up was conducted to ensure a high response rate. In the survey questionnaire, EPs were requested to provide an estimated percentage breakdown of their trading value during the study period in accordance with the prescribed classification. EPs were asked to provide their consolidated trading composition including trading channelled through their affiliate or sister companies as far as possible, if applicable. For responding EPs who have

certain answers missing, a mean substitution method<sup>10</sup> for the missing values was adopted to complete the questionnaire, except for online trading. For online trading, EPs who reported to be online brokers but were unable to provide the proportion of their retail investor trading as online trading were excluded from the responded sample in calculating the retail online trading in percentage and value terms.

The answers of each responding EP with identity in percentage terms were weighted by the respondent's total turnover value in the overall market accordingly to obtain respective values in the responded sample. The implied percentage shares of different types of trade in the market were then calculated, adjusted by the response rate in value terms relative to the target population.

For the Southbound EPs, all trading was regarded as overseas investor trading with Mainland China origin. As the breakdown of the Southbound trading by retail/institutional investors was not available, the overall share of retail/institutional investor trading based on weighted responses from the survey sample was applied to the Southbound EPs for completing the analysis for the market. For the analysis of retail online trading, the Southbound EPs were regarded as non-online brokers.

The implied value of trading for a particular type of trade is determined by multiplying the percentage contribution to total turnover (of target population) by that type of trade as obtained from the survey by the actual total turnover in the overall market during the study period for that year of survey.

## (4) Limitations

In providing the breakdown of total turnover value by the type of trade, many EPs could only provide their best estimates instead of hard data.

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.

In practice, it is not unusual for EPs to convey client orders to other EPs for execution. When providing the breakdown of their investor composition, most of the EPs would treat those EPs who conveyed orders to them as their ultimate clients, i.e. as local institutions, regardless of the client origin.

Some bank-related EPs might not be able to provide the trading composition of client orders originating from their associated banks and would treat the banks as their local institutional clients. This would also affect the result of retail online trading since part of the retail investor trading channelled through banks would be online.

Different EPs would have different corporate group structures and operating models within their corporate groups. Some EPs might be able to provide the investor composition of trading channelled via their sister companies; others may regard their sister companies as their clients

<sup>&</sup>lt;sup>10</sup> The average values obtained from other EPs in the same size group were applied to the missing cases. For this purpose, EPs in the target population (excluding Southbound EP) were divided into three size groups with equal aggregate contributions to total turnover value of the target population — large-sized brokers (contributing the top one-third of turnover in the target population), medium-sized brokers (contributing the second one-third of turnover) and small-sized brokers (contributing the bottom one-third of turnover).

and incorporated no further breakdown. In other words, the depth of detail in investor composition across EPs might not be on the same ground.

The non-responded EPs and responded EPs with missing responses for certain questions may have different trading composition from the other responded EPs. The exclusion of nonresponded EPs from the applicable analysis or the mean substitution method for missing answers might generate survey results deviating from the true situation. Since the survey has a high response rate by turnover value and a method of weighting by size group in treating missing responses was adopted to cater for the different trading composition by size group, the impact of non-responses to the overall findings would be limited. Nevertheless, there might be some impact on the types of investor trading which had relatively low contribution to market turnover.

In the analysis, Southbound trading assumed the same ratio of retail/institutional investor trading as that based on the overall weighted responses. However, Southbound trading from Mainland investors may have a different retail/institutional trading ratio due to the peculiar conditions of outward investment channels in Mainland China. Due to data unavailability of the investor composition of Southbound trading, the current treatment is considered the best-effort estimate. Nevertheless, the turnover value of the two designated Southbound EPs accounted for approximately only 5% (on a one-sided basis) of the total turnover of the overall target population (including the Southbound EPs) in 2018.

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