

## Trading of Listed Equity Products in Hong Kong, the UK and US

Research Department, Supervision of Markets Division<sup>1</sup>

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### Summary

- 1. The objective of this Research Paper is to compare the trading of stocks, their options and Exchange Traded Funds (ETFs) in Hong Kong, the UK and US (both the NYSE and Nasdaq).*
- 2. As of end 2006, there were 53 stocks (including 35 Mainland stocks<sup>2</sup> and 18 non-Mainland stocks<sup>3</sup>) and one stock option class available for trading in these three markets. There were nine stock option classes available for trading in Hong Kong and the US. We also compared the trading of ETFs in these three markets which used the HSCEI or the FTSE/Xinhua China 25 Index as the underlying.*
- 3. Our study showed that Hong Kong continued to lead the other two markets in the trading of stocks (excluding HSBC, which was heavily traded in the UK) and stock options. However, trading of ETFs in Hong Kong was less active than those in the US and Europe where ETFs are popular. In addition, the ETFs market in the US is much deeper and hence more liquid. Transaction costs in Hong Kong are also higher as a result of stamp duty.*
- 4. Growth in the trading of stock options in Hong Kong was high. New measures adopted during the period to improve the efficient functioning of the markets (i.e. narrowing of trading spreads and relaxing the position limits on stock options) should have contributed to the strong growth.*
- 5. Hong Kong remained the most active market in the trading of stocks and options. However, trading of ETFs in Hong Kong was less active and efforts should continue to deepen and widen the market and reduce transaction costs to enhance competitiveness.*

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<sup>1</sup> The paper is for fact-finding and research purposes. The views expressed in this research paper do not necessarily reflect those of the Commission.

<sup>2</sup> In this paper, Mainland stocks refer to H-shares and red chips listed in Hong Kong. Please refer to Appendix 1 for definitions of H-shares and red chips.

<sup>3</sup> Non-Mainland stocks are stocks other than H-shares and red chips. All non-Mainland stocks covered in this paper are HSI constituents listed in Hong Kong.

## Objective

6. In November 2005, we published a research paper (Research Paper No. 25) on the trading activities of HSI constituents and Mainland stocks listed in Hong Kong that were also available for trading in the UK and US. We published another research paper (Research Paper No. 31) in June 2006 on listed equity derivatives in these three markets. This paper seeks to review the latest situation and assess our competitiveness in trading on both of these fronts. This year, we added ETFs to the study as they are gaining popularity among investors.

## Hong Kong's Market Share in the Trading of Stocks Remained Stable over the Years

7. Of the 1,173 stocks listed in Hong Kong as of end 2006, 255<sup>4</sup> were HSI constituent stocks or Mainland stocks (i.e. H-shares and red chips), which accounted for about 80% of the total market cap and turnover during 2006 (excluding derivative warrants). Of these 255 stocks, 53 (18 non-Mainland stocks and 35 Mainland stocks) were also traded in the UK and US<sup>5</sup>. Hong Kong remained the most active market in these stocks with a share of 55% of total turnover in 2006. The shares for the UK and US were 38% and 7% respectively.<sup>6</sup> These shares of turnover have been quite stable in recent years.

Trading of Major Stocks in Hong Kong, the UK and US (US\$ bn)									
	Number of stocks traded in HK, the UK and US	Hong Kong		UK		US		Total	
		Value	% of total	Value	% of total	Value	% of total		
2003	47	166.39	45%	170.07	46%	32.03	9%		368.49
2004	49	280.16	52%	225.51	41%	36.73	7%		542.40
2005	51	293.66	55%	205.25	39%	31.03	6%		529.94
2006	53	424.37	55%	290.69	38%	54.60	7%		769.66

Sources: HKEx, LSE and Bloomberg

8. The active trading in the UK shown above was substantially due to HSBC, which accounted for 89% of the total turnover of the 53 stocks traded in the UK. The market shares of the trading of HSBC were 22%, 75% and 3% respectively for Hong Kong, the UK and US.

<sup>4</sup> These 255 stocks accounted for about 79% of the total market cap as of the end of 2006 and 82% of the total market turnover during 2006 (excluding derivative warrants).

<sup>5</sup> These stocks are traded on the International Board or Hong Kong Board of the London Stock Exchange (LSE), whilst they are traded in the US in the form of American Depository Receipts (ADRs). Some information vendors also provide data on OTC trading of such stocks, and their turnover has also been included.

<sup>6</sup> Turnover values are available from the exchanges or information vendors on a monthly basis. The average exchange rates of GBP and HKD during the month are used to convert such turnover figures into USD.

9. Excluding HSBC, Hong Kong accounted for 82% of the total turnover of the remaining 52 stocks in the three markets during 2006.

Trading of Major Stocks (Excluding HSBC) in Hong Kong, the UK and US (US\$ bn)									
	Number of major stocks (excl. HSBC) traded in HK, the UK and US	Hong Kong		UK		US		Total	
		Value	% of total	Value	% of total	Value	% of total		
2003	46	137.22	84%	12.76	8%	14.02	8%	164.01	
2004	48	231.41	83%	19.95	7%	27.94	10%	279.31	
2005	50	235.08	85%	18.23	7%	22.92	8%	276.22	
2006	52	349.62	82%	31.46	8%	43.95	10%	425.04	

Sources: HKEx, LSE and Bloomberg

### Trading Activities by Stock Type

10. The market share for the trading of the 18 non-Mainland stocks was 40% for Hong Kong, 57% for the UK and 3% in the US. Appendix 2 shows the details for individual stocks. Excluding HSBC, the market shares were 91%, 8% and 1% respectively.

Trading of Non-Mainland Stocks in Hong Kong, the UK and US (US\$ bn)									
	Number of Non-Mainland stocks traded in HK, the UK and US	Hong Kong		UK		US		Total	
		Value	% of total	Value	% of total	Value	% of total		
2003	17	95.02	35%	161.62	59%	18.28	6%	274.92	
2004	17	144.13	39%	210.96	58%	9.66	3%	364.74	
2005	18	160.22	44%	193.55	53%	9.21	3%	362.98	
2006	18	190.58	40%	269.61	57%	11.86	3%	472.05	

Sources: HKEx, LSE and Bloomberg

11. As for the 35 Mainland stocks, 79% of the total trading took place in Hong Kong, 7% in the UK and 14% in the US. These shares of turnover have been very stable. Appendix 3 shows the details. It is interesting to note that the growth in trading of Mainland stocks was much higher than that in non-Mainland stocks in all the three markets. For instance, trading of Mainland stocks in Hong Kong increased by 76% in 2006 from US\$133.12 bn to US\$233.79 bn while there was only an increase of 19% in the trading of non-Mainland stocks in Hong Kong.

Trading of Mainland Stocks in Hong Kong, the UK and US (US\$ bn)									
	Number of Mainland stocks traded in HK, the UK and US	Hong Kong		UK		US		Total	
		Value	% of total	Value	% of total	Value	% of total		
2003	30	71.37	77%	7.03	8%	13.75	15%	92.15	
2004	32	136.04	78%	12.51	7%	27.07	15%	175.62	
2005	33	133.12	80%	10.96	7%	21.80	13%	165.88	
2006	35	233.79	79%	21.08	7%	42.74	14%	297.61	

Sources: HKEx, LSE and Bloomberg

## Trading of Stock Options in Hong Kong and in Major Overseas Markets

### Stock options on HSBC

12. This section compares the trading of stock options. It does not cover OTC transactions<sup>7</sup>. Only one stock option class (namely stock options on HSBC) was traded in Hong Kong, the UK and US during 2006. 84% of the trading took place in Hong Kong. The market shares were 7% and 9% for the UK and US respectively<sup>8</sup>.

Trading of Stock Options on HSBC in Hong Kong, the UK and US (Contracts)							
	Hong Kong		UK		US		Total
	Number	% of total	Number	% of total	Number	% of total	
2004	1,323,803	56%	668,453	28%	384,448	16%	2,376,704
2005	1,546,542	61%	488,901	19%	512,553	20%	2,547,996
2006	3,195,883	84%	285,373	7%	351,841	9%	3,833,097

Sources: HKEx, LIFFE and OCC

13. The larger market share in Hong Kong can be explained by the following factors:
- In the UK, the growth of the stock options market has been restricted by the established OTC market for contracts for differences<sup>9</sup>. In terms of listed derivative products, investors in the UK have been more interested in trading interest rate futures and interest rate options. Therefore, despite active trading of HSBC stock in the UK, the trading of HSBC stock options was comparatively limited.
  - In the US, since the trading of HSBC stock is not active, trading of HSBC stock options was also not active despite popular interest in options in general.
  - In Hong Kong, stock options are the most actively traded derivative product after HSI futures, constituting about 42% of the total derivatives trading in Hong Kong. The active trading of HSBC stock options in Hong Kong reflects the active trading of HSBC stock.
14. Among other factors, the growth in Hong Kong's market share in this area will have been facilitated by the measures taken by the SFC and HKEx during 2005-2006 that helped boost trading of stock options:
- Trading spreads narrowed in July 2005 (for stocks priced above HK\$30) and in July 2006 (for stocks priced between HK\$2 and HK\$20). A narrowed spread for stocks leads to a reduction in bid-ask spread for options, which facilitates the matching of orders due to lower costs and risks involved. HSBC, for instance, underwent narrowing of trading spreads in July 2005. Our analysis showed that the average daily turnover of HSBC stock options increased 84% during the second half of 2005, whereas the average daily turnover of stock options whose underlying did not undergo any narrowing of trading spreads increased only 37%. (For details, please

<sup>7</sup> It is understood that the OTC derivatives market is much bigger than the exchange market. However, the information on OTC transactions is not readily available.

<sup>8</sup> Trading data in the UK is sourced from LIFFE, whilst US stock options data is collected from the Options Clearing Corporation (OCC). The OCC's participant exchanges include: the American Stock Exchange (AMEX), Boston Options Exchange (BOX), Chicago Board Options Exchange (CBOE), the International Securities Exchange (ISE), the Pacific Exchange (PCX) and the Philadelphia Stock Exchange (PHLX).

<sup>9</sup> A contract for difference (CFD) is a margin traded product to exchange the difference between the opening value and the closing value of an instrument.

refer to Research Paper No. 31 entitled *Trading of Listed Equity Derivatives in Hong Kong, the UK and US.*)

- Position limits on stock options were also relaxed effective from 10 February 2006.

### Stock options on Mainland stocks

15. There were nine stock option classes with Mainland stocks as underlying that were traded in Hong Kong and the US during 2006. The two measures discussed above helped contribute to the growth in trading in Hong Kong from 2.5 mn contracts to 6.2 mn contracts. They also contributed to the faster growth in turnover in Hong Kong than in the US. Appendix 4 shows the details.

Trading of Stock Options in Hong Kong and the US (Contracts)						
	Number of stock option classes traded in HK and the US (excl. HSBC)	Hong Kong		US		Total
		Number	% of total	Number	% of total	
2004	8	1,875,633	72%	731,663	28%	2,607,296
2005	9	2,498,203	71%	1,016,554	29%	3,514,757
2006	9	6,150,022	75%	2,045,497	25%	8,195,519

Sources: HKEx and OCC

16. It is interesting to note that trading of options on Mainland stocks in Hong Kong increased 146%, higher than the 106% growth in HSBC stock options.

### Trading of ETFs in Hong Kong, the US and Europe

17. There were five ETFs traded in Hong Kong, the US and Europe with the HSCEI or the FTSE/Xinhua China 25 Index as the underlying. Over 95% of the trading took place in the US and Europe in 2006. Appendix 5 shows the details. The overall trading in these ETFs increased by nearly 4.5 times the prior year significantly more than the increase in turnover of individual stocks (paragraphs 7-9). This together with the concentration of trading overseas indicating the important role of this product in providing “China exposure” to overseas retail investors.

Trading of ETFs on the HSCEI and the FTSE/Xinhua China 25 Index in HK, the US and Europe (US\$ mn)							
	Hong Kong		US		Europe		Total
	Value	% of total	Value	% of total	Value	% of total	
2004	731.29	39%	1,022.35	55%	111.32	6%	1,864.96
2005	261.16	6%	2,889.53	72%	880.96	22%	4,031.64
2006	413.10	2%	13,832.93	77%	3,724.57	21%	17,970.60

Sources: Morgan Stanley ETFs Worldwide Guidebook, Bloomberg and HKEx

18. The more active trading in the US and Europe is attributable to the larger market cap of related ETFs listed there and therefore a much deeper market.
- The market cap of HSCEI ETF was US\$246 mn in Hong Kong as of end 2006, but that in Europe was US\$910 mn.
  - The market cap of FTSE/Xinhua China 25 ETF in Hong Kong was US\$24 mn as of end 2006, whilst that in the US and Europe were US\$5,712 mn and US\$1,035 mn respectively.

Relative to their market cap (i.e. measuring in terms of turnover ratio), trading of ETFs in Hong Kong is also less active. For FTSE/Xinhua China 25 ETF, its turnover ratio in Hong Kong was only 80%, compared to 242% in the US and 250% in Europe.

**Market Cap and Turnover Ratio of ETFs on the HSCEI and the FTSE/Xinhua China 25 Index in HK, the US and Europe during 2006**

	Hong Kong		US		Europe	
	Market Cap (US\$ mn)	Turnover Ratio (%)	Market Cap (US\$ mn)	Turnover Ratio (%)	Market Cap (US\$ mn)	Turnover Ratio (%)
HSCEI	246	160%	n.a.	n.a.	910	125%
FTSE/Xinhua China 25 Index	24	80%	5,712	242%	1,035	250%
<b>Total</b>	<b>270</b>	<b>153%</b>	<b>5,712</b>	<b>242%</b>	<b>1,945</b>	<b>191%</b>

Sources: Morgan Stanley ETFs Worldwide Guidebook, Bloomberg and HKEx

19. Other factors underpinning the more active trading in the US and Europe include:
- The US has the world's largest market in ETFs, hence higher liquidity. According to the World Federation of Exchanges, with a turnover of about US\$2,147 bn during 2006, the NYSE accounted for 75% of the world's total turnover in ETFs.
  - The choices for investors in other markets are limited if they want to invest in and benefit from the fast-growing Mainland economy. On the other hand, more choices are available to investors in Hong Kong for Mainland stocks and related derivatives such as futures, options and warrants.
  - Trading of ETFs in Hong Kong is subject to stamp duty and therefore transaction costs in trading ETFs are higher. In addition, ETF is relatively new to Hong Kong.
  - There are options issued on FTSE/Xinhua China 25 ETF in the US and not in Hong Kong. Hedging activities arising from such derivative products may lead to increased trading of the ETF in the US.

## Conclusion

20. Hong Kong remained the clear leader over the UK and US in the trading of stocks and options traded in these three markets. Measures such as narrowing of trading spreads and relaxing the position limits have been effective in facilitating market development. This was reflected in the significant growth during 2005-2006 in Hong Kong's market share of the trading of stock options. However, Hong Kong was less active in the trading of ETFs. We should continue efforts to further deepen and widen our markets and reduce transaction costs to enhance competitiveness in the ETF market.

## Appendix 1

According to HKEx,

- H-share companies refer to companies incorporated in the PRC and approved by the Chinese Securities Regulatory Commission (CSRC) for a listing in Hong Kong. The par value of the shares of these Chinese enterprises is denominated in RMB, and the shares are subscribed for and traded in HKD or other currencies.
- Red chip companies refer to companies which
  - have at least 30% shareholding held in aggregate by Mainland China entities, and/or indirectly through companies controlled by them, with the Mainland China entities being the single largest shareholders in aggregate terms. Or
  - if the shareholding of the company held in aggregate directly and/or indirectly by Mainland China entities is below 30% but is 20% or above and there is a strong influential presence, on a judgemental basis, of Mainland China-linked individuals on the company's board of directors.

Mainland China entities include state-owned enterprises, and entities controlled by provincial and municipal authorities.

## Appendix 2

Trading of Non-Mainland Stocks in Hong Kong, the UK and US (2006, US\$ bn)								
Stock Code	Stock Name	Hong Kong		UK		US		Total
		Value	% of total	Value	% of total	Value	% of total	
1	Cheung Kong	15.84	90.9%	1.31	7.5%	0.27	1.6%	17.42
2	CLP Holdings	4.52	85.0%	0.50	9.4%	0.30	5.6%	5.32
3	HK & China Gas	4.82	91.3%	0.43	8.1%	0.03	0.7%	5.28
5	HSBC	74.74	21.7%	259.23	75.2%	10.66	3.1%	344.63
6	HK Electric	2.68	89.8%	0.21	7.2%	0.09	3.1%	2.98
8	PCCW	3.20	93.8%	0.20	5.8%	0.01	0.4%	3.41
11	Hang Seng Bank	6.97	92.5%	0.56	7.4%	0.005	0.07%	7.53
12	Henderson Land	5.85	91.1%	0.55	8.6%	0.03	0.4%	6.43
13	Hutchison	25.45	89.5%	2.75	9.7%	0.25	0.9%	28.45
16	SHKP	16.90	91.6%	1.51	8.2%	0.04	0.2%	18.44
17	New World Development	4.33	94.1%	0.27	5.8%	0.002	0.05%	4.60
19	Swire Pacific A	6.25	92.8%	0.45	6.7%	0.03	0.5%	6.74
23	Bank of East Asia	4.18	91.0%	0.36	7.9%	0.05	1.1%	4.59
66	MTR Corporation	3.31	93.9%	0.21	6.0%	0.004	0.1%	3.53
83	Sino Land	2.85	91.5%	0.26	8.5%	0.0007	0.02%	3.12
101	Hang Lung Properties	4.24	93.9%	0.25	5.4%	0.03	0.7%	4.52
179	Johnson Electric <sup>^</sup>	1.42	87.8%	0.16	10.2%	0.03	2.0%	1.62
293	Cathay Pacific	3.01	91.3%	0.27	8.1%	0.02	0.6%	3.30
<b>Total</b>		<b>190.58</b>	<b>40.4%</b>	<b>269.61</b>	<b>57.1%</b>	<b>11.86</b>	<b>2.5%</b>	<b>472.05</b>

Remark: <sup>^</sup> Johnson Electric was removed from HSI on 8th September, 2006.  
Sources: HKEx, LSE and Bloomberg

## Appendix 3

Trading of Mainland Stocks in Hong Kong, the UK and US (2006, US\$ bn)								
Stock Code	Stock Name	Hong Kong		UK		US		Total
		Value	% of total	Value	% of total	Value	% of total	
168	Tsingtao Brewery	0.38	90.3%	0.025	5.9%	0.02	3.8%	0.42
177	Jiangsu Expressway	1.18	93.7%	0.08	6.3%	0.00005	0.004%	1.26
267	Citic Pacific*	3.21	94.6%	0.17	5.0%	0.01	0.3%	3.40
291	China Resources Enterprise*	2.45	93.8%	0.16	6.2%	0.0008	0.03%	2.62
338	Sinopec Shanghai Petrochemical	4.30	87.4%	0.22	4.5%	0.40	8.0%	4.91
347	Angang New Steel	2.41	89.3%	0.29	10.6%	0.0006	0.02%	2.69
358	Jiangxi Copper	6.92	92.7%	0.54	7.3%	0.002	0.03%	7.47
363	Shanghai Industrial	0.60	92.9%	0.046	7.1%	0.0002	0.02%	0.65
386	Sinopec Corp*	18.87	73.9%	2.27	8.9%	4.40	17.2%	25.54
392	Beijing Enterprise	0.98	91.5%	0.09	8.4%	0.0007	0.07%	1.07
525	GuangShen Railway	0.97	80.1%	0.07	5.7%	0.17	14.2%	1.21
576	ZheJiang Expressway	1.13	94.0%	0.07	6.0%	0.00005	0.004%	1.21
670	China Eastern Airlines	0.54	92.1%	0.01	2.5%	0.03	5.3%	0.58
728	China Telecom	11.52	85.7%	1.15	8.5%	0.78	5.8%	13.45
753	Air China	1.99	93.5%	0.14	6.5%	0.00002	0.001%	2.13
762	China Unicom*	4.07	73.0%	0.49	8.8%	1.01	18.2%	5.57
857	PetroChina	31.37	62.6%	3.37	6.7%	15.38	30.7%	50.12
883	CNOOC*	20.66	74.1%	2.53	9.1%	4.70	16.8%	27.88
902	Huaneng Power	4.36	80.1%	0.36	6.6%	0.72	13.3%	5.44
906	China Netcom*	4.54	82.5%	0.38	6.9%	0.58	10.6%	5.5
941	China Mobile*	37.59	79.2%	3.61	7.6%	6.29	13.2%	47.49
991	Datang Power	2.38	92.8%	0.18	7.0%	0.003	0.1%	2.56
992	Lenovo Group	2.48	90.5%	0.17	6.1%	0.09	3.3%	2.74
1045	APT Satellite	0.006	39.1%	0.00004	0.3%	0.01	60.6%	0.02
1055	China Southern Airlines	0.80	88.7%	0.04	4.9%	0.06	6.4%	0.91
1065	Tianjin Capital	0.19	75.2%	0.006	2.2%	0.06	22.6%	0.26
1093	China Pharmaceutical Group	0.12	97.9%	0.003	2.0%	0.00005	0.04%	0.13
1114	Brilliance China Automotive	0.59	87.9%	0.02	3.6%	0.06	8.5%	0.67
1135	Asia Satellite Telecom	0.07	79.5%	0.008	8.4%	0.011	12.1%	0.09
1138	China Shipping Development	2.20	91.0%	0.22	9.0%	0.00002	0.0008%	2.42
1171	Yanzhou Coal Mining	4.54	83.6%	0.51	9.4%	0.38	6.9%	5.43
2388	BOC Hong Kong*	14.78	93.5%	1.01	6.4%	0.02	0.1%	15.81
2600	Aluminum Corp Of China	7.40	74.0%	0.54	5.4%	2.07	20.6%	10.01
2628	China Life Insurance	37.26	82.8%	2.22	4.9%	5.49	12.2%	44.98
2883	China Oilfield Services	0.90	92.6%	0.07	7.4%	0.0004	0.04%	0.98
<b>Total</b>		<b>233.79</b>	<b>78.6%</b>	<b>21.08</b>	<b>7.1%</b>	<b>42.74</b>	<b>14.4%</b>	<b>297.61</b>

Remark:\* refers to stocks which are also HSI stocks.  
Sources: HKEx, LSE and Bloomberg

## Appendix 4

Trading of Stock Options in Hong Kong and the US (2006, Contracts)						
Underlying Stock Code	Underlying Stock Name	Hong Kong		US		Total
		Number	% of total	Number	% of total	
386	Sinopec	224,138	49.4%	229,342	50.6%	453,480
728	China Telecom	273,333	89.4%	32,279	10.6%	305,612
762	China Unicom	67,385	60.4%	44,130	39.6%	111,515
857	PetroChina	748,717	37.6%	1,242,490	62.4%	1,991,207
883	CNOOC	658,403	92.6%	52,529	7.4%	710,932
902	Huaneng Power	83,687	86.0%	13,669	14.0%	97,356
906	China Netcom	52,940	74.4%	18,183	25.6%	71,123
941	China Mobile	2,656,778	93.1%	195,563	6.9%	2,852,341
2628	China Life Insurance	1,384,641	86.4%	217,312	13.6%	1,601,953
<b>Total</b>		<b>6,150,022</b>	<b>75.0%</b>	<b>2,045,497</b>	<b>25.0%</b>	<b>8,195,519</b>

Sources: HKEx and OCC



## Appendix 5

Trading of ETFs on the HSCEI and the FTSE/Xinhua China 25 in HK, the US and Europe (US\$ mn)					
Underlying	ETF	Exchange	Average Daily Turnover		
			2004	2005	2006
HSCEI	HS H-Share ETF	HKEx	2.94	0.99	1.59
	Lyxor ETF China (HSCEI)	Euronext Paris	n.a.	0.28	1.63
		Borsa Italiana	n.a.	0.43	2.27
		Deutsche Börse	n.a.	n.a.	0.81
FTSE/Xinhua China 25 Index	HS FXI C25 ETF	HKEx	n.a.	0.12	0.08
	iShares FTSE/Xinhua China 25	NYSE	17.33	11.47	55.11
	iShares FTSE/Xinhua China 25	LSE	2.32	1.34	4.26
		Virt-X	0.01	0.18	0.34
		Deutsche Boerse	n.a.	0.37	1.07
		Borsa Italiana	n.a.	1.55	3.93
		Euronext Amsterdam	n.a.	0.24	0.61
Swiss Exchange		n.a.	0.10	0.53	
Euronext Paris	n.a.	n.a.	0.42		

Sources: Morgan Stanley ETFs Worldwide Guidebook, Bloomberg and HKEx