

Profile of the Stock Options Market in Hong Kong

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Summary

- *Trading activities of stock options in Hong Kong lag behind the US and European markets. Nevertheless, Hong Kong is the third most active market in Asia in 2003, after Australia and India. Total trading volume reached the record high of 4.22 mn contracts in 2003. This was 29% of the total number of derivatives contracts traded on HKEx. The growth of the stock options market is important to the overall development of the derivatives market in Hong Kong.*
- *Trading activities of stock options have not been growing in line with the cash market. Though the trading volume of stock options has been relatively stable during 2000-2003, the number of stock option classes has increased from 18 to 33 during the same period. This reflects the fact that the trading volume of each stock option class has declined on average and that the increase in total trading volume has been largely due to the launch of new stock option classes.*
- *The trading value of stock options in 2003 was HK\$3.3 bn. Based on this measure, the derivative warrants market is more active than the stock options market by international standards.*
- *The stock options market in Hong Kong is dominated by professional trading. This is reflected by:*
 - *a large average transaction volume (34 contracts in 2003);*
 - *a high proportion of market making (71.3% in 2003) but a low proportion of agency trading (25.2% in 2003);*
 - *a small share of the trading volume handled by Category C brokers (5.0% in 2003); and*
 - *a low average daily trading volume to open interest ratio (3.1% in 2003).*
- *Despite a rise in trading volume in 2003, trading value was lower than in 2002. Among other factors, this was possibly due to an increase in the share of:*
 - *tier 2 stock options relative to tier 1 stock options;*
 - *small-sized transactions relative to large-sized transactions; and*
 - *options of lower premiums relative to options of higher premiums.*
- *The trading of stock options has been concentrated on a few stocks. This phenomenon is also observed in the derivative warrants market.*
- *The trading of stock options by type (call and put) was very balanced, whereas the trading of derivative warrants was dominated by call derivative warrants.*

¹ This paper is for pure fact-finding and research purpose, and is not an attempt to comment on the developments of any markets/companies or interpret the policies concerned. The views expressed in the paper do not represent those of the SFC.

Introduction

1. Exchange traded stock options were first introduced by the Chicago Board Options Exchange in April 1973. The options market developed rapidly during the 1980s. In Hong Kong, stock options were launched in September 1995. This made Hong Kong the first market in Asia to have exchange-traded stock options available for trading. As of the end of 2003, there were 33 stock option classes traded, with the underlying stocks covering more than half of total stock market capitalisation.
2. Trading activities of stock options were much more active in US and European markets than in Asia. According to the statistics from the World Federation of Exchanges (WFE), Hong Kong's stock options market lag the world leaders. Nevertheless, it is the third most active market in Asia in 2003, after Australia and India.

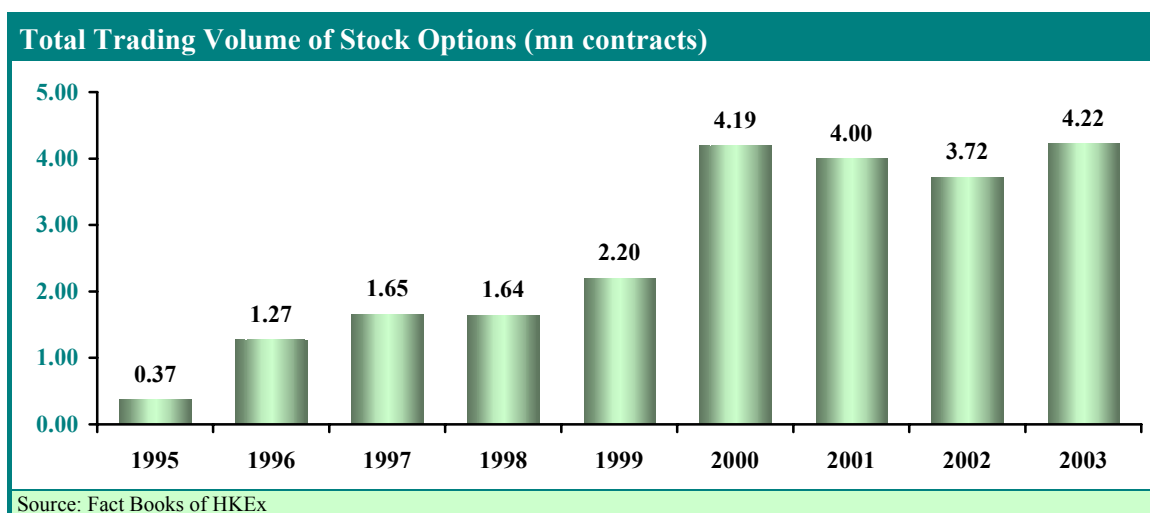
Trading Volume of Stock Options on Major Markets in 2003 & 2002 (mn contracts)			
Region	Exchanges	2003	2002
Asia, Pacific	Australian SE	15.99	15.99
	Hong Kong Exchanges & Clearing	4.22	3.72
	National Stock Exchange of India	5.61	2.77
	Tokyo SE	0.30	0.30
	Korea SE	0.01	0.06
North America	AMEX	142.66	146.15
	Bourse de Montréal	6.36	6.25
	Chicago Board Options Exchange	173.03	173.19
	International Securities Exchange	220.99	140.62
	Pacific SE	70.41	71.83
South America, Europe, Africa, Middle East	Philadelphia SE/BOT	89.46	78.43
	EUREX	188.24	143.30
	EURONEXT	244.68	323.59
	Italian Exchange	7.92	7.59
	JSE South Africa	6.88	8.10
	Oslo Bors	2.08	1.71
	RTS Stock Exchange	1.80	0.46
	Spanish Exchanges (BME)	11.38	18.70
Stockholmsboersen	43.10	35.80	

Source: WFE

3. The purpose of this study is to provide information on the trading activities of the stock options market in Hong Kong. The potential and the significance of stock options market for the development of overall derivatives market are discussed from the local and international perspectives. The latest trading patterns are also analysed.

Development and Importance of the Stock Options Market in Hong Kong

4. The trading of stock options has been growing since their inception. Turnover grew strongly in 2000, with a total trading volume of 4.19 mn contracts, 90% higher than 1999. The growth could be attributable to the buoyant trading activities of the cash market during the year. However, turnover of stock options declined slightly after that. In 2003, total trading volume reached the record high of 4.22 mn contracts.



Key Statistics of Stock Options Market in Hong Kong

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Number of Stock Option Classes	9	13	15	17	17	18	31	33	33
Total Contract Volume (mn contracts)	0.37	1.27	1.65	1.64	2.20	4.19	4.00	3.72	4.22
Total Contract Value (HK\$ bn)	0.6	1.9	4.0	4.3	5.3	13.9	7.9	4.7	3.3
Total Number of Transactions	23,605	69,111	43,544	49,882	69,807	88,088	88,848	95,468	124,064
Open Interests (Year End)	44,578	50,981	214,353	62,080	209,210	462,494	231,657	370,891	553,896
Average Transaction Size (i.e. Average Premium per Trade) (HK\$)	25,275	28,080	92,710	85,994	76,137	157,851	88,879	49,219	26,703
Average Premium per Contract (HK\$)	1,604	1,528	2,449	2,620	2,418	3,320	1,974	1,232	784
Average Contract Volume per Transaction (contracts)	16	18	38	33	31	48	45	39	34
Average Daily Contract Volume / Open Interest	10.7%	10.0%	3.1%	10.7%	4.3%	3.7%	7.2%	4.1%	3.1%
Options Volume / Underlying Stock Volume	14.8%	5.5%	3.6%	3.4%	6.4%	8.5%	4.4%	3.4%	2.7%

Sources: HKEx, Fact Book, various issues

5. The trading volume of 4.22 mn contracts was 29% of the total number of derivatives contracts traded on HKEx. The shares were 47% for HSI Futures contract, 14.6% for HSI Options contract and 8.6% for Mini-HSI Futures contract. Stock options are the second most important derivative products in Hong Kong. The growth of the stock options market is important to the overall development of the derivatives market in Hong Kong.

6. The trading volume of stock options has been relatively stable during 2000-2003. However, it should also be noted that the number of stock option classes has been increasing. As of the end of 2000, for instance, there were 18 stock option classes. This rose to 33 as of the end of 2003. Therefore, the trading volume of each stock option class has declined on average and the increase in total trading volume has been largely due to the launch of new stock option classes. The following table shows the five most actively traded stock option classes in 2000 and that their aggregate trading volume in 2003 shrank.

Transaction of Stock Options by Underlying Stock					
	2000		2003		% Change in Transaction Volume
	Transaction Volume (mn contracts)	% of Total	Transaction Volume (mn contracts)	% of Total	
5 Most Active Stock Option Classes in 2000	5.80	69.2%	3.88	45.9%	-33.1%
New Stock Option Classes Launched during 2001-2003	---	---	1.54	18.2%	n.a.
Other Equities	2.58	30.8%	3.03	35.9%	17.4%
Total	8.38	100.0%	8.45	100.0%	0.8%

Remark: Both buying and selling transactions have been counted in the calculation.
Source: SFC Research estimates based on the Market Surveillance System (MSS); data may be slightly different from HKEx's

7. In addition, the trading volume of stock options as a percentage of the underlying stocks also fell from 8.5% in 2000 to 2.7% in 2003. The trading volume of stock options increased 13% during 2003, though turnover on the cash market increased 57%. Trading activities of stock options have not been growing in line with the cash market.

The Derivative Warrants Market is More Active than the Stock Options Market

8. The trading value of stock options in 2003 was HK\$3.3 bn. By value, this was only 0.13% of the total turnover on the cash market of HKEx during the year or only 0.06% of the total market cap of the stock market. These ratios were low by international standards. According to the WFE, the proportion of trading value of stock options to total market turnover was 1.6% for Australia, 1.8% for Germany and 1.1% for Euronext. The ratio of trading value of stock options to market cap was 1.0% for Australia, 1.9% for Germany and 1.1% for Euronext.

Total Trading Value of Stock Options / Derivative Warrants as % of Stock Market Turnover and of Market Cap (2003, %)

Region	Exchanges	Stock Options		Derivative Warrants	
		As % of Market Turnover	As % of Market Cap	As % of Market Turnover	As % of Market Cap
Asia, Pacific	Australia	1.6%	1.0%	0.4%	0.3%
	HKEx	0.13%	0.06%	10.2%	4.8%
Europe	Germany	1.8%	1.9%	3.6%	4.3%
	EURONEXT	1.1%	1.1%	0.5%	0.5%

Source: WFE

9. In contrast, the derivative warrants market of Hong Kong has developed rapidly. According to HKEx, it is the world's second most active derivative warrants market in 2003 by turnover. Turnover of derivative warrants on HKEx in 2003 amounted to HK\$264.0 bn. This was about 10.2% of the total market turnover on HKEx or 4.8% of the total market cap as of the end of 2003. These ratios were high by international standards. Based on the figures from HKEx² and WFE, the proportion of turnover of derivative warrants to total market turnover was 0.4% for Australia, 3.6% for Germany and 0.5% for Euronext. The ratio of turnover of derivative warrants to market cap was 0.3% for Australia, 4.3% for Germany and 0.5% for Euronext.
10. Among other factors, the relatively active trading of derivative warrants is attributable to the fact that trading is more convenient and the market is more accessible. Derivative warrants are traded like stocks, and investors can trade warrants using their normal investor accounts. But for stock options, investors must open a separate account with an Options Trading Exchange Participant (OTEP).
11. In addition, after many years of development, the Hong Kong derivative warrants market is well known to retail investors. The high liquidity in this market itself has attracted more and more investors to participate. The product features of derivative warrants market have been modified to better meet the needs of investors. In addition to the expansion in the number and range of warrants, warrants with more exotic payoff features have been introduced for trading. Currently, exotic warrants account for about one-third of the derivative warrants turnover.
12. The reasons for the more active trading of derivative warrants could be numerous, and possibly more research is needed.

² HKEx, *Exchange*, April 2004, pp.40-58.

The Stock Options Market is Dominated by Professional Trading

13. Trading activities on the stock options market are very much dominated by professional trading. This is reflected by:
- a large average transaction volume;
 - a high proportion of market making but a low proportion of agency trading;
 - a small share of trading volume handled by Category C brokers; and
 - a low average daily trading volume to open interest ratio.
- In addition, HKEx's Derivatives Market Transaction Survey (DMTS) 2002/2003 showed that the share of professional trading (including principal trading) in stock options was 88% for the 12 months ending June 2003.

A large average transaction volume

14. The most common transaction size of stock options in 2003 ranged from 21 contracts to 50 contracts, followed by the range of 51-100 contracts. This was in contrast to HSI Futures and Mini-HSI Futures where most transactions were of one contract in size. In 2003, 76% of the transactions of HSI Futures and 84% of the transactions of Mini-HSI Futures were transactions of one contract in size.
15. Although transactions above 300 contracts declined by 43.7% in 2003, they still constituted more than 10.9% of the total trading volume. Also, transactions of 20 or less contracts accounted for only 12.4% of the total volume, the majority still being dominated by large-sized transactions, indicating that the market remained very much a professional market.

Number of Contracts Per Transaction	2002		2003		% Change in Volume
	Transaction Volume (mn contracts)	% of Total	Transaction Volume (mn contracts)	% of Total	
1 to 20	0.74	9.8%	1.04	12.4%	40.9%
21 to 50	2.11	27.8%	2.88	34.0%	36.5%
51 to 100	2.24	29.6%	2.26	26.8%	0.9%
101 to 300	0.86	11.4%	1.35	16.0%	56.2%
Above 300	1.63	21.5%	0.92	10.9%	-43.7%
Total	7.58	100.0%	8.45	100.0%	11.4%

Remark: Both buying and selling transactions have been counted in the calculation.
Source: SFC Research estimates based on the MSS; data may be slightly different from HKEx's

A high proportion of market making and a low proportion of agency trading

16. To promote liquidity, HKEx operates a market making system for the stock options market. Certain OTEPs are designated as market makers, who are bound by HKEx rules to provide a firm quote for a minimum number of lots in a particular series and within a maximum bid-ask spread upon request.
17. HKEx statistics (only trading volume is available) showed that trading of market makers accounted for 71.3% of the total in 2003. This was much higher than the corresponding figure for the derivative warrants market. Trading activities of liquidity providers accounted for about 30% of the total turnover (this included market making activities and agency trading) in the derivative warrants market. Compared to the trading of derivative warrants, market makers have played a more important role in the trading of stock options.
18. In addition, HKEx statistics showed that the share of market making in the stock options market actually increased from 61.6% in 2000, indicating that market makers have gained importance in the trading of stock options.
19. In contrast to the rise in the share of market makers, the share of proprietary trading fell from 24.6% to 3.4% over the same period. Agency trading on the stock options market constituted 25.2% of the trading volume in 2003. This increased from 13.8% in 2000.

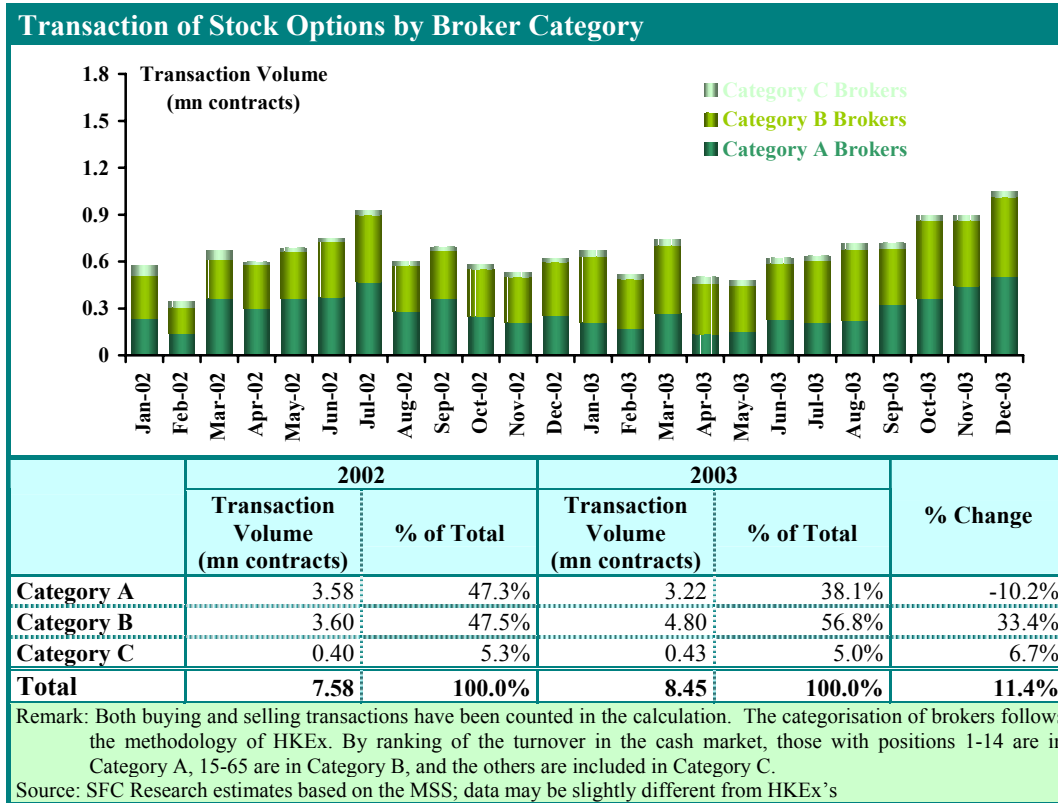
Trading of Stock Options by Trading Purpose of Brokers (%)				
	2000	2001	2002	2003
Number of Market Makers	6	6	11	13
Percentage of Contract Volume by Type of Accounts				
- Market Makers	61.6%	60.6%	66.7%	71.3%
- Agency Trading	13.8%	23.2%	22.0%	25.2%
- Proprietary Trading	24.6%	16.3%	11.3%	3.4%

Sources: HKEx, *Fact Book*, various issues

A small share of trading was handled by Category C brokers

20. As of the end of 2003, there were 47 OTEPs. All OTEPs are SEHK participants, and can be grouped into Categories A, B and C according to HKEx's classification. Of the 47 OTEPs, 12 were Category A brokers, 20 were Category B brokers and 15 were Category C brokers. In 2003, the trading of stock options handled by Category C brokers accounted only for a very small share of the total, indicating a small share of retail trading or a high share of professional trading.
 - The transaction volume of stock options handled by Category A brokers was 38.1% in 2003.

- The transaction volume of stock options handled by Category B brokers was 56.8%.
- The transaction volume of stock options handled by Category C brokers was 5.0%.



21. In contrast, the trading of derivative warrants was mainly handled by Category B (44.6% in 2003) and Category C (33.9% in 2003) brokers. Among other factors, this was attributable to the fact that retail investors are more interested in derivative warrants as well as the fact that many Category B brokers were appointed as liquidity providers of derivative warrants.

A low average daily trading volume to open interest ratio

22. The ratio of average daily trading volume to open interest in 2003 was 3.1% for stock options. This was low as compared to other options products:
- 12% for HSI Options; and
 - 39% for Mini-HSI Options.
23. The low trading volume to open interest ratio indicates that the trading of stock options tends to be associated with relatively longer investment horizons, which might also be related to hedging of professional trading.

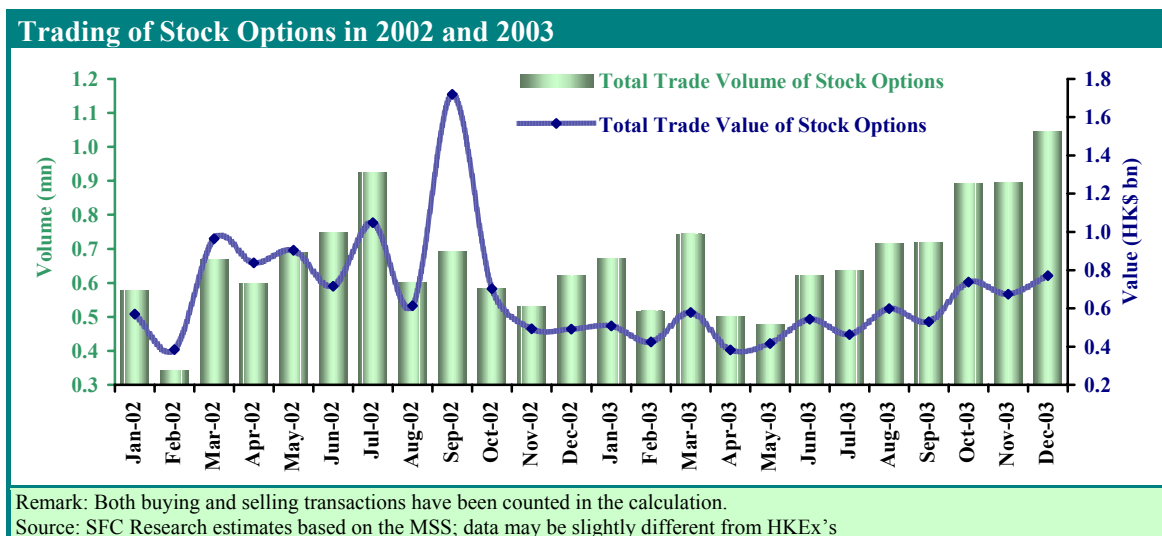
Summing up

24. It appears that professional trading plays an important role in the stock options market. The large transaction volume shows that these transactions are probably professional. The high share of market making activities also illustrates the same point. The small share of the trading of stock options handled by Category C brokers also suggests that the market is largely professional. Finally, the low trading volume to open interest ratio indicates that the trading of stock options tends to be associated with relatively longer investment horizons, which might also be related to hedging of professional trading. This is echoed by HKEx’s DMTS which showed that the share of professional trading (including principal trading) in stock options was 88% for the 12 months ending June 2003. This compared to the share of retail trading of 12%.

Trading of Stock Options in 2003 – Trading Volume Increased, but Trading Value Declined

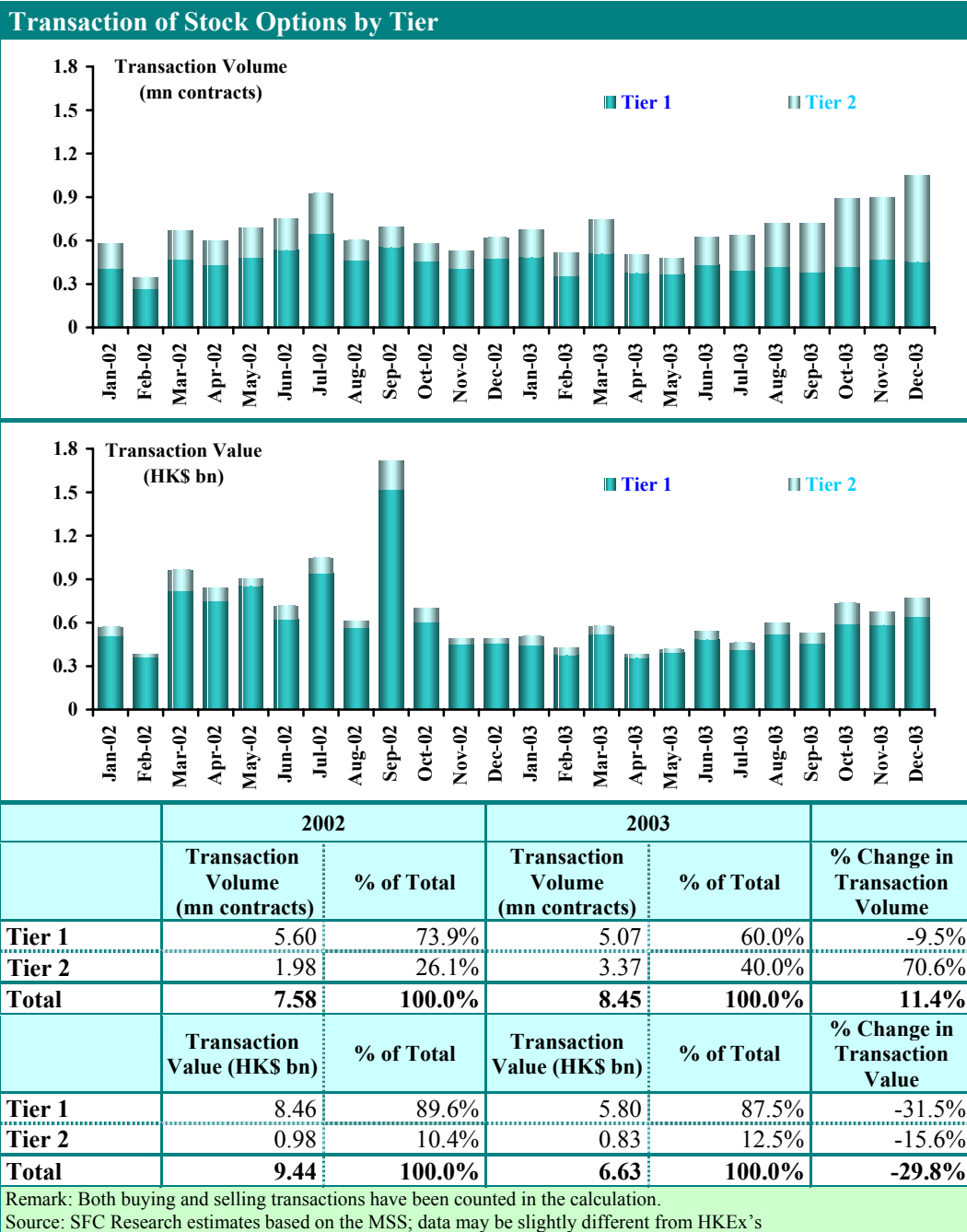
25. Despite a rise in trading volume in 2003, trading value was lower than in 2002. Among other factors, this was possibly due to the increase in the share of:

- tier 2 options relative to tier 1 options;
- small-sized transactions relative to large-sized transactions; and
- options of lower premiums relative to options of higher premiums.



Trading of tier 1 stock options declined

26. For the purpose of reporting positions, stock options are classified into two tiers, namely tier 1 and tier 2. The classification is based on the market value of one lot of the underlying stock at the time of launching the stock options. Those with market values for one lot of the underlying stocks in excess of HK\$20,000 are classified as tier 1, otherwise as tier 2.
27. As of the end of 2003, 19 stock option classes were tier 1 and 14 were tier 2. Because tier 1 options in general have higher premiums than tier 2 options (at least at the time of introduction), the trading value of tier 1 options is generally higher for the same amount of trading volume.
- The average premium per contract for tier 1 options in 2003 was HK\$1,143 (a drop of 24% from HK\$1,509 in 2002).
 - The average premium per contract for tier 2 options in 2003 was HK\$246 (a drop of 51% from HK\$498 in 2002).
28. The average premium per contract for tier 2 options in 2003 was only 22% of that for tier 1 options (33% in 2002). Although the average premium per contract for both tiers declined, the drop was much higher for tier 2 options. In other words, premiums for tier 2 options were both much smaller and declining more rapidly.
29. Because the rise in the trading volume of stock options in 2003 was mainly attributable to the surge in the trading volume of tier 2 options (and because tier 2 options had much smaller and rapidly declining premiums), the trading value in 2003 shrank.
- The transaction volume of tier 2 options soared 70.6%. Their share in 2003 rose to 40.0% from 26.1% in 2002.
 - In contrast, the transaction volume of tier 1 options slid 9.5%. Their share in 2003 shrank to 60.0% from 73.9% in 2002.
30. Although the trading values of both tiers declined in 2003, the drop in the overall trading value was mainly due to tier 1 options because of the larger fall in value as well as the larger weight.
- The transaction value of tier 1 options dropped 31.5% from HK\$8.5 bn in 2002 to HK\$5.8 bn in 2003.
 - The transaction value of tier 2 options dropped 15.6% from HK\$1.0 bn in 2002 to HK\$0.8 bn in 2003. That the transaction volume of tier 2 options was higher in 2003 was due to the fact that trading has shifted to:
 - small-sized transactions; and
 - options with lower premiums.



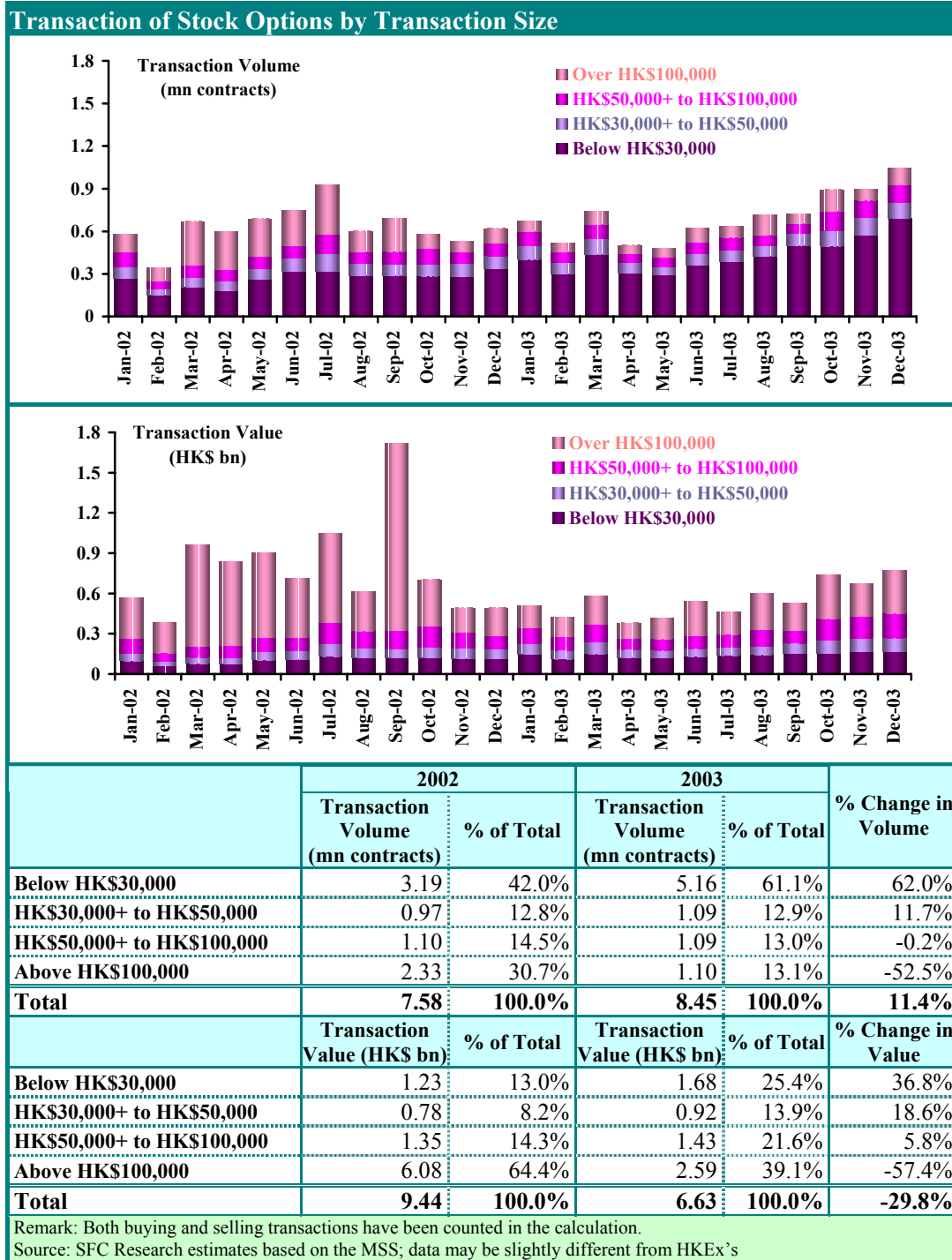
Growth in trading volume was underpinned by small-sized transactions

31. Compared to common stocks and derivative warrants, stock options had a smaller average transaction size.
- In 2003, the average transaction size for stock options was HK\$26,703, much lower than the average size of HK\$99,264 for common stocks and HK\$48,916 for derivative warrants.
 - The average transaction size for stock options decreased significantly in 2003, to a level only slightly more than half of that in 2002.

Number of Transactions and Transaction Size of Stock Options vs. Common Shares and Derivative Warrants						
	2002			2003		
	Stock Options	Derivative Warrants	Common Stocks	Stock Options	Derivative Warrants	Common Stocks
Total Turnover (HK\$ bn)	4.7	112.5	1,535.5*	3.3	264.0	2,323.4*
Total Number of Transactions (mn)	0.096	3.6	16.9*	0.124	5.4	23.4*
Average Transaction Size (HK\$)	49,219	31,084	90,692	26,703	48,916	99,264

* Turnover value and number of transactions of common stocks include turnover of ETFs, ELIs and others such as Nasdaq shares.
Source: SFC Research estimates based on the MSS; data may be slightly different from HKEx's

32. The increase in the trading volume of stock options in 2003 was attributable to small-sized transactions. In contrast, the trading volume of large-sized transactions declined.
- The trading volume of transactions below HK\$30,000 rose 62.0% in 2003.
 - On the contrary, the trading volume of transactions above HK\$100,000 dropped 52.5%.
33. In value terms, the trading value of small-sized transactions increased in 2003. In contrast, the trading value of large-sized transactions decreased.
- The trading value of transactions below HK\$30,000 rose 36.8% in 2003.
 - The trading value of transactions above HK\$100,000 declined 57.4%. This decline contributed to the fall in overall trading value in 2003, despite transactions of all other sizes increased in trading value.
34. Because the rise in the trading volume of stock options in 2003 was mainly attributable to the surge in trading volume of small-sized transactions, trading value in 2003 still declined.



35. For both tier 1 and tier 2 stock options, the trading volume of small-sized increased, whilst that of large-sized transactions declined.
- For tier 1 stock options, the trading volume of transactions below HK\$30,000 rose 26.7% in 2003. On the contrary, the trading volume of transactions above HK\$100,000 dropped 57.8%.

- For tier 2 stock options, the trading volume of transactions below HK\$30,000 surged 140.4% in 2003, whilst the trading volume of transactions above HK\$100,000 dropped 37.7%.

Transaction of Stock Options by Transaction Size and by Tier					
	2002		2003		% Change in Transaction Volume
	Transaction Volume (mn contracts)	% of Total	Transaction Volume (mn contracts)	% of Total	
Tier 1 Options					
Below HK\$30,000	2.20	39.2%	2.78	54.9%	26.7%
HK\$30,000+ to HK\$50,000	0.78	13.9%	0.77	15.2%	-1.3%
HK\$50,000+ to HK\$100,000	0.91	16.3%	0.79	15.7%	-13.1%
Above HK\$100,000	1.71	30.5%	0.72	14.2%	-57.8%
Total	5.60	100.0%	5.07	100.0%	-9.5%
Tier 2 Options					
Below HK\$30,000	0.99	49.9%	2.38	70.4%	140.4%
HK\$30,000+ to HK\$50,000	0.19	9.8%	0.32	9.4%	64.3%
HK\$50,000+ to HK\$100,000	0.18	9.2%	0.30	8.9%	64.0%
Above HK\$100,000	0.61	31.1%	0.38	11.3%	-37.7%
Total	1.98	100.0%	3.37	100.0%	70.6%
Remark: Both buying and selling transactions have been counted in the calculation.					
Source: SFC Research estimates based on the MSS; data may be slightly different from HKEx's					

Trading of in-the-money options declined

36. In volume terms, the trading of in-the-money³ stock options decreased, whilst that of out-of-the-money stock options increased in 2003. Other things being equal, in-the-money options command higher premiums than out-of-the-money options. An increase in the share of out-of-the-money options relative to in-the-money options would therefore mean an increase in the share of options of lower premiums relative to options of higher premiums. This could also explain the fall in the trading value of stock options, despite an increase in the volume traded in 2003.
- The trading volume of in-the-money stock options dropped 15.5% in 2003.
 - In contrast, the trading volume of at-the-money stock options climbed 25.8%.
 - The trading volume of out-of-the-money stock options rose 16.5%.

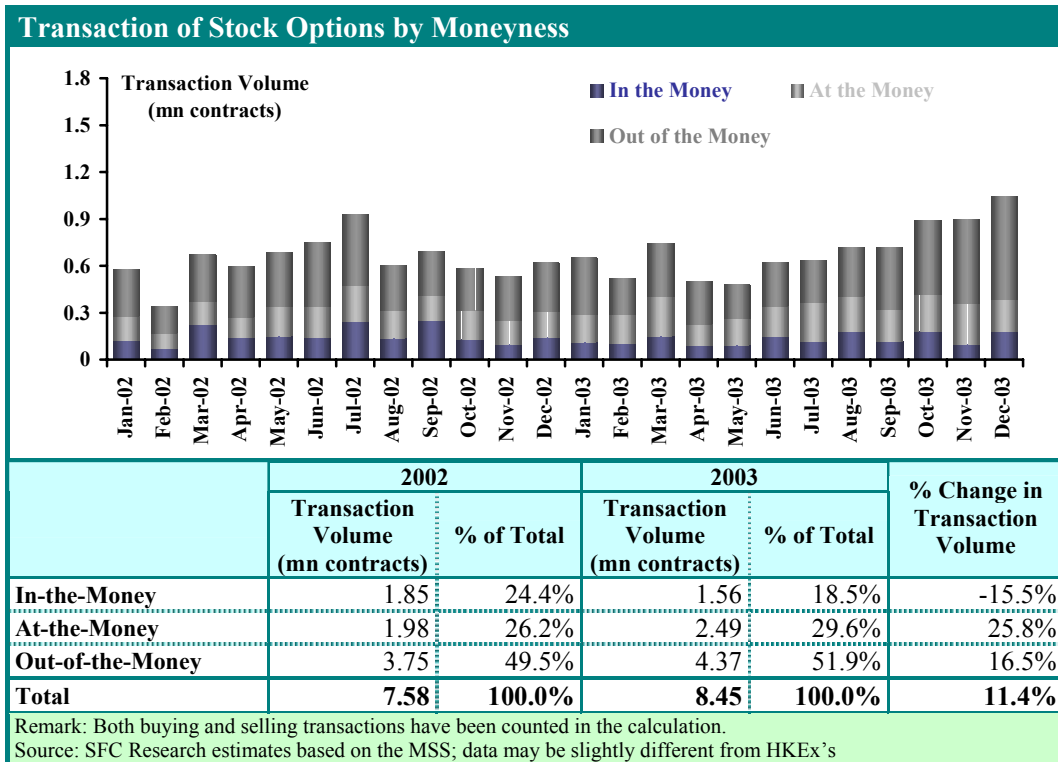
³

A call option is considered as:

- in-the-money if exercise price $\leq 0.975 \times$ stock price;
- at-the-money if $0.975 \times$ stock price $<$ exercise price $\leq 1.025 \times$ stock price; and
- out-of-the-money if exercise price $> 1.025 \times$ stock price.

A put option is considered as:

- in-the-money if exercise price $> 1.025 \times$ stock price;
- at-the-money if $0.975 \times$ stock price $<$ exercise price $\leq 1.025 \times$ stock price; and
- out-of-the-money if exercise price $\leq 0.975 \times$ stock price.



37. The rise in the share of out-of-the-money options relative to in-the-money options in 2003 was mainly attributable to tier 2 stock options.
 - The trading volume of out-of-the-money tier 2 stock options soared 105.1%.
 - The trading volume of at-the-money tier 2 stock options increased 75.7%.
 - On the contrary, the trading volume of in-the-money tier 2 stock options decreased 1.6%.

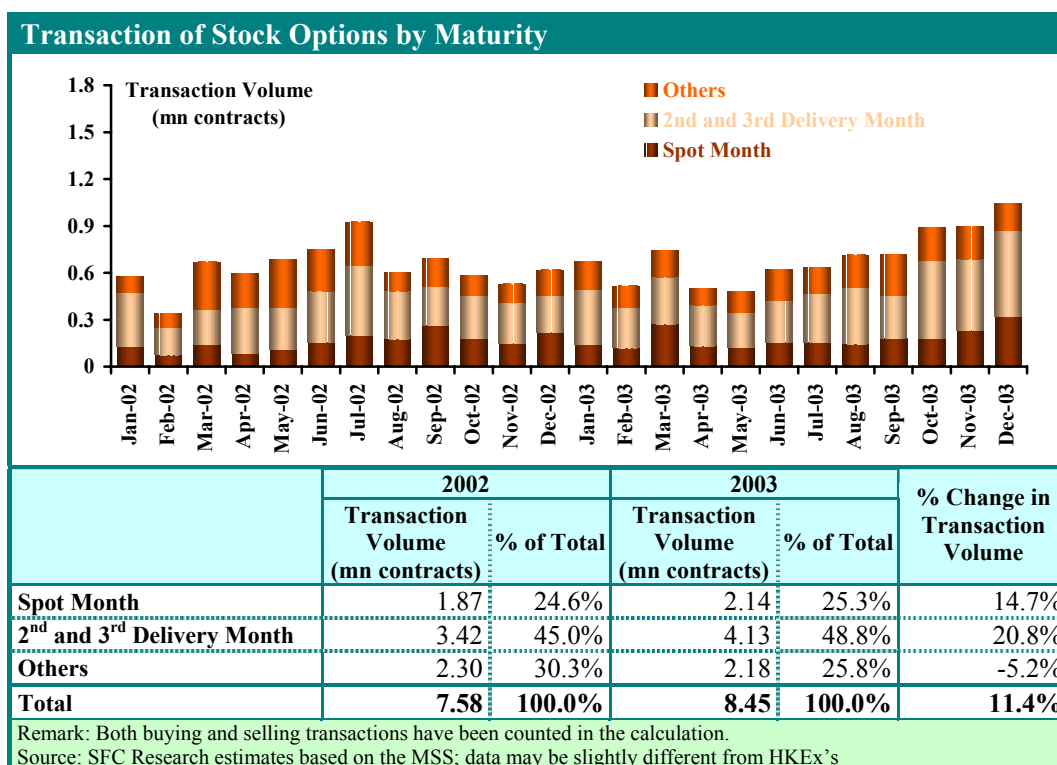
38. For tier 1 stock options, the trading volume of both in-the-money and out-of-the-money options declined, whilst that of at-the-money options rose slightly by 7.9% during the period.

39. Because the rise in the trading volume of stock options in 2003 was mainly attributable to the surge in trading volume of tier 2 options and because the surge in trading volume of tier 2 options was largely due to the jump in out-of-the-money and at-the-money options, the trading value in 2003 still declined.

Transaction of Stock Options by Moneyness and by Tier					
	2002		2003		% Change in Transaction Volume
	Transaction Volume (mn contracts)	% of Total	Transaction Volume (mn contracts)	% of Total	
Tier 1 Options					
In-the-Money	1.33	23.7%	1.05	20.7%	-20.9%
At-the-Money	1.46	26.0%	1.57	31.1%	7.9%
Out-of-the-Money	2.81	50.2%	2.44	48.2%	-13.1%
Total	5.60	100.0%	5.07	100.0%	-9.5%
Tier 2 Options					
In-the-Money	0.52	26.1%	0.51	15.1%	-1.6%
At-the-Money	0.52	26.4%	0.92	27.4%	75.7%
Out-of-the-Money	0.94	47.5%	1.93	57.4%	105.1%
Total	1.98	100.0%	3.37	100.0%	70.6%
Remark: Both buying and selling transactions have been counted in the calculation.					
Source: SFC Research estimates based on the MSS; data may be slightly different from HKEx's					

Trading of stock options with longer maturities declined

40. In volume terms, the trading of stock options with maturities longer than three months declined in 2003. Other things being equal, options with longer maturities tend to command higher premiums due to higher time value. An increase in the share of options of shorter maturities relative to options of longer maturities would therefore mean an increase in the share of options of lower premiums relative to options of higher premiums. This may contribute to the fall in the trading value of stock options, despite an increase in the volume traded.
- The trading volume of spot month stock options increased 14.7%.
 - The trading volume of stock options of 2nd delivery month and 3rd delivery month increased 20.8%.
 - In contrast, the trading volume of stock options with maturities longer than three months declined 5.2%.
41. The rise in the share of shorter maturities relative to longer maturities was mainly due to tier 2 stock options. The trading volume of tier 2 options moved up in 2003 across all maturity terms, with that of spot month increasing most.
- The trading volume of spot month tier 2 stock options soared 131.4%.
 - The trading volume of tier 2 stock options of 2nd delivery month and 3rd delivery month surged 106.3%.
 - The trading volume of tier 2 stock options with maturities longer than three months increased 17.5%.



42. In contrast, the trading volume of tier 1 stock options declined across all maturity terms, with that of longer maturities dropping most.
- The trading volume of spot month tier 1 stock options declined 7.3%.
 - The trading volume of tier 1 stock options of 2nd delivery month and 3rd delivery month declined 5.5%.
 - The trading volume of tier 1 stock options with maturities longer than three months declined 19.3%.

Transaction of Stock Options by Maturity and by Tier

	2002		2003		% Change in Transaction Volume
	Transaction Volume (mn contracts)	% of Total	Transaction Volume (mn contracts)	% of Total	
Tier 1 Options					
Spot Month	1.57	28.0%	1.45	28.7%	-7.3%
2nd and 3rd Delivery Month	2.61	46.6%	2.47	48.7%	-5.5%
Others	1.42	25.4%	1.15	22.6%	-19.3%
Total	5.60	100.0%	5.07	100.0%	-9.5%
Tier 2 Options					
Spot Month	0.30	15.0%	0.68	20.3%	131.4%
2nd and 3rd Delivery Month	0.80	40.6%	1.66	49.1%	106.3%
Others	0.88	44.4%	1.03	30.6%	17.5%
Total	1.98	100.0%	3.37	100.0%	70.6%

Remark: Both buying and selling transactions have been counted in the calculation.
Source: SFC Research estimates based on the MSS; data may be slightly different from HKEx's

43. Because the rise in the trading volume of stock options in 2003 was mainly attributable to the surge in trading volume of tier 2 options and because the surge in trading volume of tier 2 options was largely due to the jump in short-term options, the trading value in 2003 still declined.

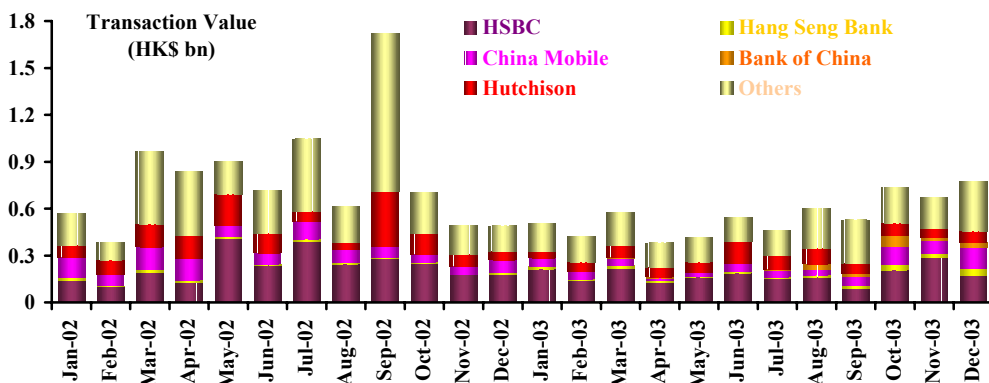
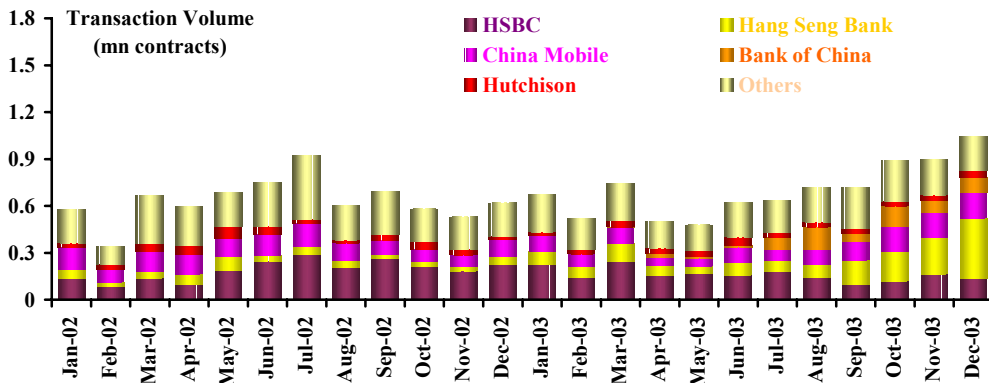
Summing up

44. Therefore, trading has shifted to lower premium options. This was the result of
- an increase in the share of tier 2 options;
 - an increase in the share of small-sized transactions;
 - an increase in the share of out-of-the-money options; and
 - an increase in the share of options of short-term maturity.
45. Because the rise in the trading volume of stock options in 2003 was mainly attributable to the surge in trading volume of tier 2 options and because tier 2 options had smaller and declining premiums, there was a fall in the trading value of stock options, despite an increase in the volume traded. At the same time, within tier 2 options, there was a shift of trading activities from options of higher premiums (e.g. in-the-money options or longer term options) to options of lower premiums (e.g. out-of-the-money options or shorter term options). In other words, the rise in volume was not able to offset the double-squeeze in value, namely the shift to tier 2 options and, within tier 2 options, the shift to options of lower premiums.

Trading of Stock Options was Concentrated on A Few Stocks

46. In volume terms, the trading of stock options was concentrated on a few stocks. Stock options issued on HSBC contributed 22.9% to the total volume, and stock options issued on the five most active stocks contributed 68.7% to the total volume in 2003. The rise in the trading volume of stock options in 2003 was due to the increases in the trading of options issued on Hang Seng Bank and Bank of China, both of which are tier 2 options.
47. In value terms, the five most active stock options accounted for 62.5% of the market total in 2003.
48. The trading of derivative warrants was also concentrated on a few stocks. By underlying, the trading of derivative warrants issued on the five most active underlying stocks contributed 70.6% to the total equity derivative warrants in 2003. The five most active underlying for derivative warrants were HSBC, Hutchison Whampoa, China Mobile, Cheung Kong and Sun Hung Kai.

Transaction of Stock Options by Underlying Stock



	2002		2003		% Change in Transaction Volume
	Transaction Volume (mn contracts)	% of Total	Transaction Volume (mn contracts)	% of Total	
HSBC Holdings	2.25	29.7%	1.94	22.9%	-13.9%
Hang Seng Bank	0.56	7.4%	1.57	18.6%	179.2%
China Mobile	1.33	17.6%	1.26	14.9%	-5.7%
Bank of China	---	---	0.61	7.2%	n.a.
Hutchison Whampoa	0.48	6.4%	0.42	5.0%	-12.2%
Top 5 Sub-total	4.63	61.1%	5.80	68.7%	25.3%
Other Equities	2.95	38.9%	2.65	31.3%	-10.4%
Total	7.58	100.0%	8.45	100.0%	11.4%
	2002		2003		% Change in Transaction Value
	Transaction Value (HK\$ bn)	% of Total	Transaction Value (HK\$ bn)	% of Total	
HSBC Holdings	2.72	28.8%	2.11	31.8%	-22.6%
Hang Seng Bank	0.14	1.5%	0.22	3.4%	63.1%
China Mobile	1.07	11.3%	0.70	10.6%	-34.4%
Bank of China	---	---	0.19	2.9%	n.a.
Hutchison Whampoa	1.51	16.0%	0.92	13.9%	-39.0%
Top 5 Sub-total	5.43	57.6%	4.14	62.5%	-23.8%
Other Equities	4.01	42.4%	2.49	37.5%	-38.0%
Total	9.44	100.0%	6.63	100.0%	-29.8%

Remark: Both buying and selling transactions have been counted in the calculation.
 Source: SFC Research estimates based on the MSS; data may be slightly different from HKEx's

Trading of Stock Options was More Balanced by Type than Derivative Warrants

49. By type, the trading volume of both call and put options increased in 2003. The trading activities of call options and put options remained very balanced.
- The transaction volume of call options climbed 7.9% in 2003. Their share in 2003 was 49.3% (50.9% in 2002).
 - The transaction volume of put options added 15.1%. Their share in 2003 was 50.7% (49.1% in 2002).
50. This was in contrast to derivative warrants where the trading was concentrated in call warrants. For instance, call warrants accounted for 82% of the total transaction value of equity derivative warrants in 2003 (73% in 2002). This may reflect that retail investors, who are believed to be the major participants in the derivative warrants market as indicated by the large share of Category B and C brokers, are
- more interested in call warrants than put warrants; and/or
 - not used to utilising puts.

