

## Profile of the Derivative Warrants Market in Hong Kong

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### Executive Summary

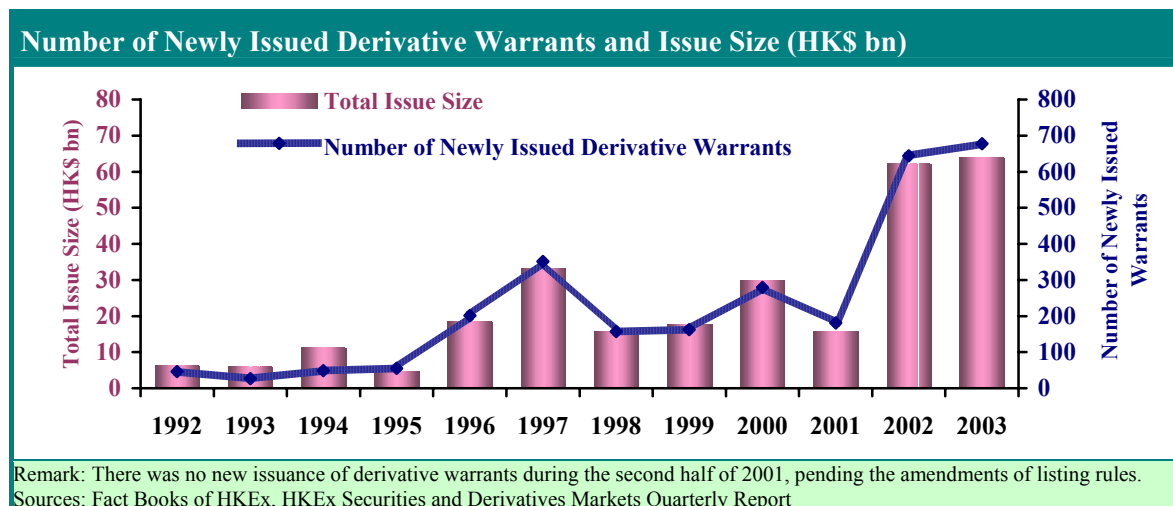
- *Following the amendments of listing rules in Jan 2002, the derivative warrants market has developed remarkably. In the first two months of 2004, 216 derivative warrants were issued, with a total issue size of HK\$26.4 bn. These were 1.3 times and 1.5 times respectively the values for the whole year of 1999.*
- *Call warrants on individual stocks are the most common type of derivative warrants. However, the shares of exotic warrants and index warrants have increased rapidly in recent years.*
- *A majority of derivative warrants were issued with maturities between 6 months and 9 months, but exotic warrants tend to have longer maturities.*
- *A majority of derivative warrants were issued on a few stocks. For instance, the top 5 popular underlyings accounted for about 60% of the total issue size during 2002 – 2003.*
- *Compared to common stocks, derivative warrants had a smaller average transaction size but a higher liquidity ratio.*
- *The turnover of derivative warrants has increased.*
  - *The increase in trading activities of derivative warrants was very much driven by exotic warrants and index warrants.*
  - *The share of liquidity providers has remained at around 30%, indicating that they have been playing an important role in the trading of derivative warrants.*
  - *The trading of derivative warrants was mainly handled by Category B brokers, as many Category B brokers were appointed as liquidity providers.*
  - *Large-sized transactions constituted a small share of trades, but a disproportionately large share of the transaction value. Meanwhile, the share of large-sized transactions increased significantly in 2003.*
  - *In terms of underlying, the trading of derivative warrants was concentrated on a few stocks.*

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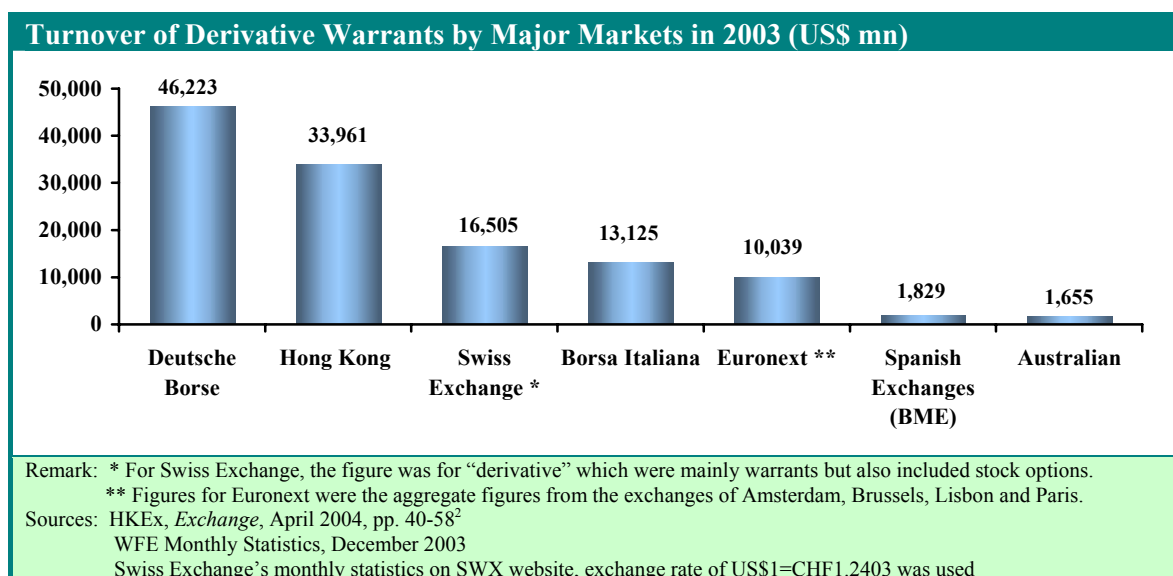
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## Listing Rules Changes

- Following the amendments of listing rules in Jan 2002 (which removed the obligations to place derivative warrants before a listing and introduced a requirement for warrant issuers to appoint a liquidity provider), the derivative warrants market was re-launched and has developed remarkably. 644 and 687 derivative warrants were issued in 2002 and 2003 respectively, with a total issue size of HK\$126.1 bn. This compared with the 279 new issues in 2000, and 181 in the first half of 2001.



- Based on the information released by HKEx and the World Federation of Exchanges (WFE), turnover of Hong Kong's derivative warrants market was the second most active in the world in 2003, only behind Deutsche Börse.



<sup>2</sup> According to HKEx, the data source is the WFE and the terminology used is "covered warrants". However, it is understood that the different WFE member exchanges supplied warrant figures according to their own definitions. Therefore, direct and absolute comparison may not be very valid.

3. The derivative warrants market of Hong Kong developed further in 2004. In the first two months of 2004, 216 derivative warrants were issued, with a total issue size of HK\$26.4 bn. These were 1.3 times and 1.5 times respectively the values for the whole year of 1999.

### Derivative Warrants by Type

4. Derivative warrants issued and listed in Hong Kong can be classified into the following types by nature and underlying asset:
- equity call warrants;
  - equity put warrants;
  - index warrants;
  - exotic warrants<sup>3</sup>; and
  - others (including basket warrants and currency warrants).

Number of Derivative Warrants Issued and Total Issue Size during 2002-2003								
	2000		2001		2002		2003	
Number of Derivative Warrants Issued								
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
Equity Call	235	84.2%	147	81.2%	419	65.1%	281	41.4%
Equity Put	25	9.0%	26	14.4%	127	19.7%	80	11.8%
Index	16	5.7%	5	2.8%	58	9.0%	138	20.4%
Exotic	0	0.0%	0	0.0%	23	3.6%	167	24.6%
Others*	3	1.1%	3	1.7%	17	2.6%	12	1.8%
Total	279	100.0%	181	100.0%	644	100.0%	678	100.0%
Total Issue Size								
	Amount (HK\$ bn)	% of Total	Amount (HK\$ bn)	% of Total	Amount (HK\$ bn)	% of Total	Amount (HK\$ bn)	% of Total
Equity Call	24.81	83.1%	13.12	82.8%	39.93	64.2%	24.47	38.3%
Equity Put	2.62	8.8%	2.14	13.5%	12.24	19.7%	8.02	12.5%
Index	2.10	7.0%	0.42	2.7%	6.00	9.7%	14.36	22.5%
Exotic	0.00	0.0%	0.00	0.0%	2.42	3.9%	16.38	25.6%
Others*	0.34	1.1%	0.16	1.0%	1.57	2.5%	0.66	1.0%
Total	29.86	100.0%	15.84	100.0%	62.16	100.0%	63.88	100.0%
Remark: * includes basket warrants and currency warrants								
Sources: SFC Research and HKEx								

<sup>3</sup> Exotic warrants are derivative warrants with exotic features that are different from standard call or put warrants. Some of them are modified single call or put warrants, while others are effectively a combination of two or more standard warrants. On the HKEx trading system view screen, exotic warrants carry a symbol "X" in their names.

5. Call warrants on individual stocks are the most common type of derivative warrants. However, the market shares of exotic warrants and index warrants have increased rapidly in recent years.
- A majority of the derivative warrants are call warrants issued on individual stocks, but their market share has been decreasing.
    - By number, their proportion dropped from 84.2% in 2000 to 41.4% in 2003.
    - By issue size, their proportion fell from 83.1% to 38.3% over the period.
  - The proportion of put warrants issued on individual stocks reached a peak level of around 20% in 2002, reflecting the relatively bearish market sentiment during that period. However, following the market recovery in 2003, the number and the proportion of put warrants dropped from the peaks in 2002, but were still higher than the levels in 2000 and 2001.
  - The number of index warrants issued increased from 16 (5.7%) in 2000 to 138 (20.4%) in 2003, and the total issue size increased from HK\$2.1 bn (7.0%) to HK\$14.4 bn (22.5%).
  - Exotic warrants have developed quickly. In 2003, 167 (24.6%) exotic warrants were issued, with a total issue size of HK\$16.4 bn (25.6%).

#### Derivative Warrants by Maturity

6. A majority of derivative warrants were issued with maturities between 6 months (the minimum allowed) and 9 months, but exotic warrants tend to have longer maturities.
- A majority of derivative warrants were issued with maturities between 6 months and 9 months, though the proportion decreased from 93.9% in 2000 to 66.2% in 2003.
  - Nevertheless, this was largely attributable to the longer maturities of exotic warrants. For instance, of the 167 exotic warrants issued in 2003, 84 (50.3%) have maturities longer than 1 year.

Number of Derivative Warrants Issued During 2000-2003 by Maturity								
	2000		2001		2002		2003	
Maturity	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
6 Months to 9 Months	262	93.9%	155	85.6%	488	75.7%	449	66.2%
9 Months to 1 Year	15	5.4%	24	13.3%	85	13.2%	103	15.2%
Over 1 Year	2	0.7%	2	1.1%	71	11.0%	126	18.6%
<b>Total</b>	<b>279</b>	<b>100.0%</b>	<b>181</b>	<b>100.0%</b>	<b>644</b>	<b>100.0%</b>	<b>678</b>	<b>100.0%</b>

Sources: SFC Research and HKEx

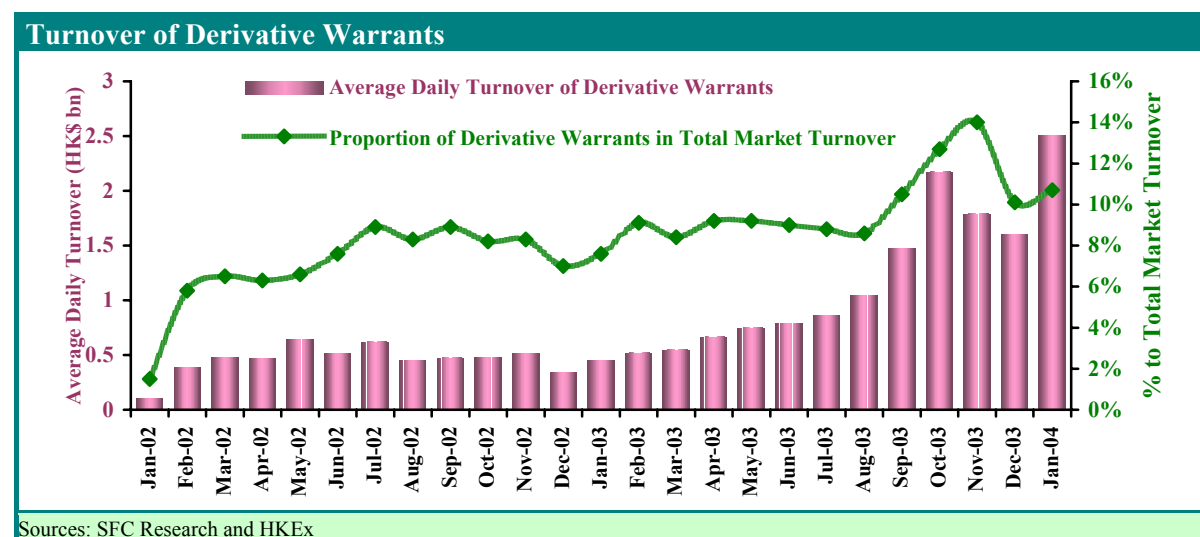
### Derivative Equity Warrants by Underlying Stock

7. The majority of derivative warrants were issued on a few stocks.
- Of the total issue size of HK\$84.7 bn issued during 2002 – 2003, HSBC was the most popular underlying, with HK\$14.4 bn (17.0%) issued. Hutchison and China Mobile were the 2<sup>nd</sup> and 3<sup>rd</sup>, with HK\$10.3 bn (12.2%) and HK\$10.2 bn (12.1%) issued respectively. The total issue size of the top five popular underlyings amounted to HK\$50.2 bn, accounting for 59.3% of the total.
  - For the period 2000 – 2001, the total issue size of the top five popular underlyings amounted to HK\$24.3 bn, accounting for 56.8% of the total.

Number and Issue Size of Five Most Popular Underlying Stocks				
Company Name	Number of Derivative Warrants Issued		Total Issue Size	
	Number	% of Total	Amount (HK\$ bn)	% of Total
<b>For the Period Jan 00 – Dec 01 before New Listing Rules</b>				
HSBC Holdings	63	14.5%	6.40	15.0%
PCCW	46	10.6%	5.29	12.4%
China Mobile HK Ltd	44	10.2%	4.50	10.5%
Hutchison Whampoa Ltd	41	9.5%	4.40	10.3%
Cheung Kong Holdings Ltd	37	8.5%	3.68	8.6%
Others	202	46.7%	18.42	43.2%
<b>Total</b>	<b>433</b>	<b>100.0%</b>	<b>42.68</b>	<b>50.4%</b>
<b>For the Period Jan 02 – Dec 03 after New Listing Rules</b>				
HSBC Holdings	142	15.7%	14.42	17.0%
Hutchison Whampoa Ltd	106	11.7%	10.29	12.2%
China Mobile HK Ltd	108	11.9%	10.22	12.1%
Cheung Kong Holdings Ltd	93	10.3%	8.83	10.4%
Sun Hung Kai Properties	70	7.7%	6.46	7.6%
Others	388	42.8%	34.45	40.7%
<b>Total</b>	<b>907</b>	<b>100.0%</b>	<b>84.66</b>	<b>100.0%</b>
Remark: Exotic warrants and warrants issued on indices and basket products are not included.				
Sources: SFC Research and HKEx				

## Trading Activities of Derivative Warrants

8. As of the end of Jan 2004, 609 derivative warrants were listed. The average daily turnover of derivative warrants amounted to HK\$2.51 bn in Jan 2004 (10.7% of the total market turnover). These compared to 293 derivative warrants listed at the end of Apr 2003, with an average daily turnover of HK\$0.67 bn in Apr 2003 (9.2% of the total market turnover). Between Apr 2003 and Jan 2004, turnover of the derivative warrants increased 275%, higher than the 222% increase for the total market turnover.



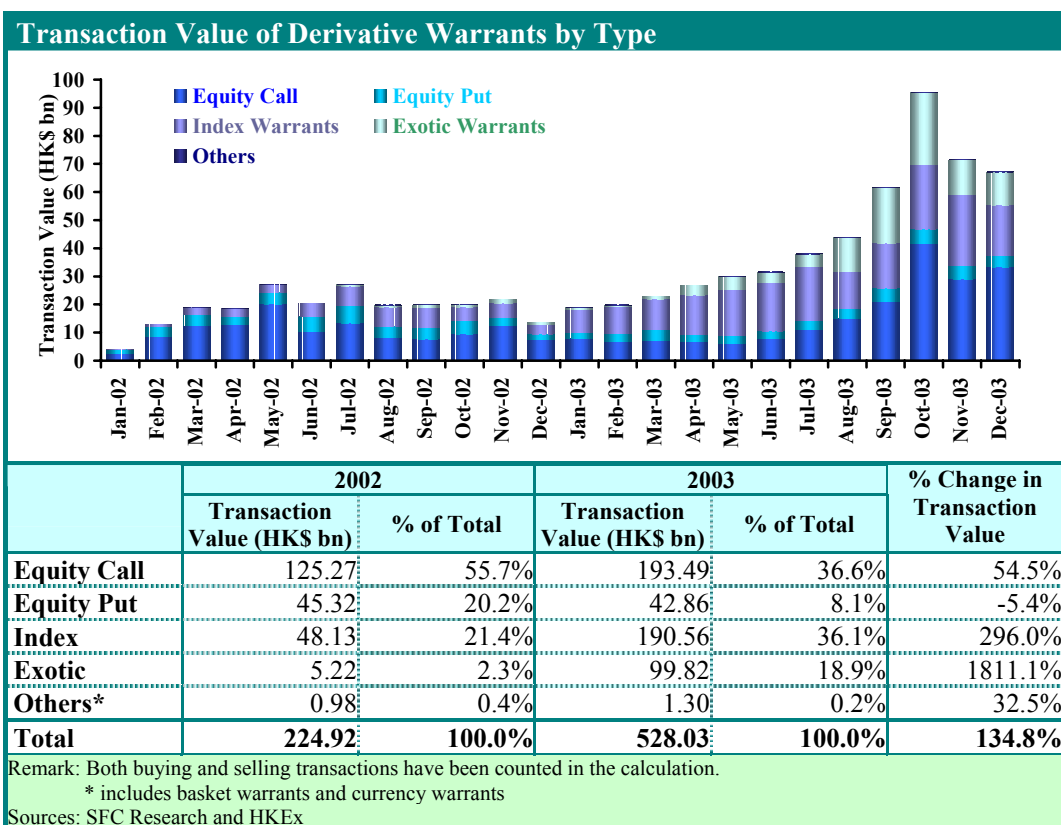
9. Compared to common stocks, derivative warrants had a smaller average transaction size but a higher liquidity ratio.
- Turnover of derivative warrants amounted to HK\$264 bn in 2003, accounting for 10.2% of the total market turnover. The average transaction size of derivative warrants was HK\$48,916, lower than the average size of HK\$99,264 for the common stocks<sup>4</sup>.
  - Nevertheless, the derivative warrants market has a higher liquidity ratio. In 2003, it was 336%. This compared to 42% for common stocks.

Number of Transactions and Transaction Size of Derivative Warrants vs. Common Stocks				
	2002		2003	
	Derivative Warrants	Common Stocks*	Derivative Warrants	Common Stocks*
(1) Total Number	347	978	530	1,037
(2) Total Market Value (HK\$ bn)	18.3	3,611	78.7	5,548
(3) Total Turnover (HK\$ bn)	112.5	1,535.5*	264.0	2,323.4*
(4) Total Number of Transactions (mn)	3.6	16.9*	5.4	23.4*
Average Transaction Size (HK\$) [(3)/(4)]	31,084	90,692	48,916	99,264
Liquidity Ratio [(3)/(2)]	615%	42%	336%	42%
* Number of common stocks was represented by the number of listed companies; market value of common stocks include domestic stocks but exclude those under suspension for over one year; turnover value and number of transactions of common stocks include turnover of ETFs, ELIs and others such as Nasdaq shares.				
Sources: SFC Research and HKEx				

<sup>4</sup> Another possible comparison would be to use the notional value of warrants transacted, which should be much bigger in transaction size because of the leverage effect.

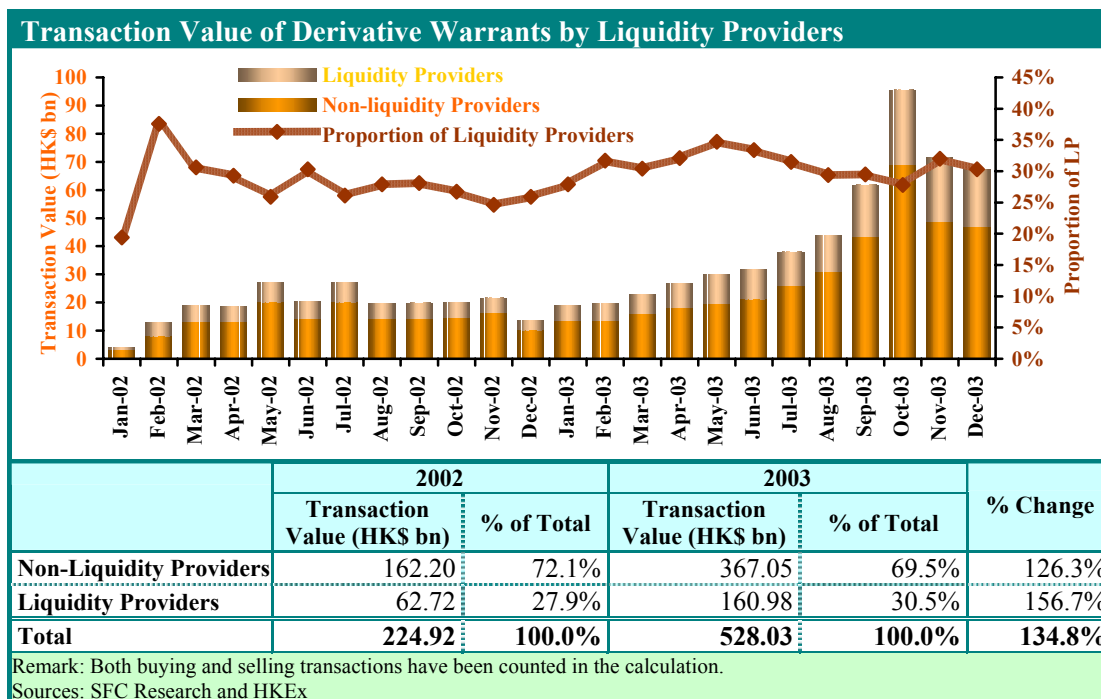
### Trading Activities of Derivative Warrants by Type

10. The increase in trading activities of derivative warrants was very much driven by exotic warrants and index warrants.
- The equity call warrants accounted for a large share of the transaction value. Their transaction value increased 54.5% from HK\$125.3 bn (55.7% of total) in 2002 to HK\$193.5 bn (36.6% of total) in 2003.
  - In contrast, the total transaction value of equity put warrants dropped 5.4% from HK\$45.3 bn (20.2% of total) to HK\$42.9 bn (8.1% of total) during the period.
  - The index warrants also gained, with transaction value rising almost three times from HK\$48.1 bn in 2002 to HK\$190.6 bn in 2003, with market share rising from 21.4% to 36.1%.
  - The transaction value of exotic warrants surged to HK\$99.8 bn in 2003, with a market share of 18.9%.



### Trading Activities of Derivative Warrants by Liquidity Providers

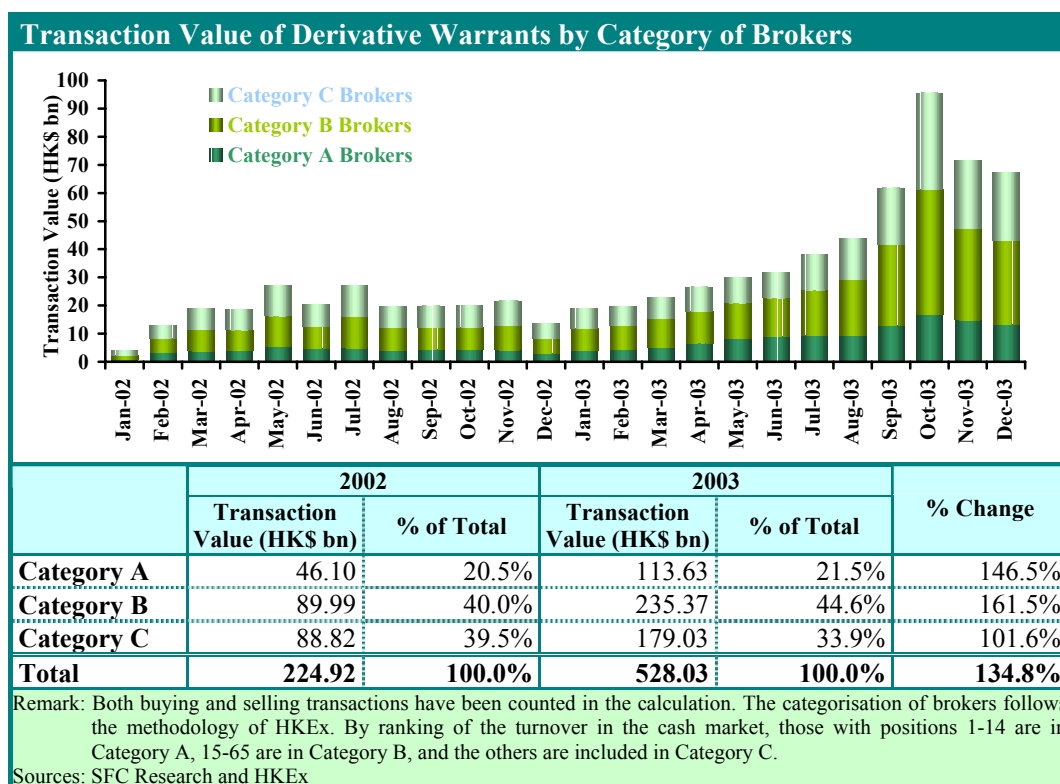
11. The new listing rules introduced the obligation for issuers to appoint liquidity providers (directly or through an agent). The market share of liquidity providers has been fluctuating within the range of 20-40%. On average, the share of liquidity providers has remained at around 30% since the re-launch of the market, indicating that liquidity providers have been playing an important role in the trading of derivative warrants.





### Trading Activities of Derivative Warrants by Broker Category

12. In contrast to the overall market where Category A brokers accounted for about 46% of the total turnover in 2003, transactions in derivative warrants were mainly handled by Category B and Category C brokers. Among other factors, this was attributable to the fact that many Category B brokers were appointed as liquidity providers of derivative warrants.
- Trading became more concentrated on Category B brokers. The market share of Category B brokers increased from 40.0% in 2002 to 44.6% in 2003. The total transaction value handled by Category B brokers amounted to HK\$235.4 bn in 2003, 161.5% higher than the corresponding level in 2002 (HK\$90.0 bn). Since many Category B brokers were appointed as liquidity providers, this might have contributed to the increase in the market share of Category B brokers.
  - The transaction value in derivative warrants handled by Category C brokers was HK\$179.0 bn in 2003, 102% higher than the value in 2002 (HK\$88.8 bn). However, the market share of Category C brokers dropped from 39.5% in 2002 to 33.9% in 2003.
  - The transaction value by Category A brokers gained 146.5% from HK\$46.1 bn in 2002 to HK\$113.6 bn in 2003, whilst their market share was relatively stable at around 21% during the period.

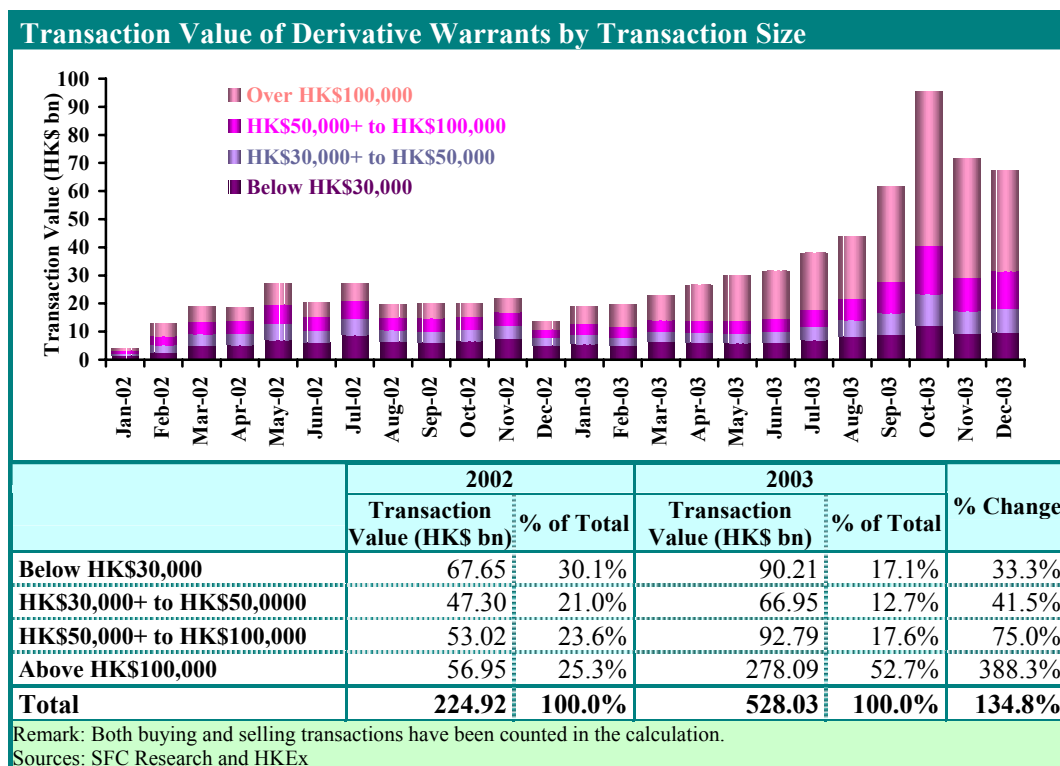


### *Trading Activities of Derivative Warrants by Transaction Size*

13. Small-sized transactions accounted for a large share of trades, but a disproportionately small share of the transaction value. In contrast, large-sized transactions constituted a small share of trades, but a disproportionately large share of the transaction value.
- Transactions less than HK\$30,000 constituted 61.8% of the total trades in 2003 (68.0% in 2002), but these trades accounted for only 17.1% of the total transaction value (30.1% in 2002).
  - Transactions above HK\$100,000 constituted 10.0% of the total trades in 2003 (4.5% in 2002), but they contributed 52.7% to the total transaction value (25.3% in 2002).

Number of Trades and Transaction Value of Derivative Warrants (2002-2003)				
Year 2002				
	Number of Trades (mn)	% of Total	Transaction Value (HK\$ bn)	% of Total
Below HK\$30,000	4.9	68.0%	67.6	30.1%
HK\$30,000+ to HK\$50,000	1.2	16.8%	47.3	21.0%
HK\$50,000+ to HK\$100,000	0.8	10.6%	53.0	23.6%
Above HK\$100,000	0.3	4.5%	56.9	25.3%
<b>Total</b>	<b>7.2</b>	<b>100.0%</b>	<b>224.9</b>	<b>100.0%</b>
Year 2003				
	Number of Trades (mn)	% of Total	Transaction Value (HK\$ bn)	% of Total
Below HK\$30,000	6.7	61.8%	90.2	17.1%
HK\$30,000+ to HK\$50,000	1.7	15.9%	66.9	12.7%
HK\$50,000+ to HK\$100,000	1.3	12.3%	92.8	17.6%
Above HK\$100,000	1.1	10.0%	278.1	52.7%
<b>Total</b>	<b>10.8</b>	<b>100.0%</b>	<b>528.0</b>	<b>100.0%</b>
Remark: Both buying and selling transactions have been counted in the calculation.				
Sources: SFC Research and HKEx				

14. The share of large-sized transactions has increased.
- In 2003, transactions above HK\$100,000 contributed HK\$278.1 bn (52.7%) to the total transaction value. This compared with the HK\$57.0 bn (25.3%) in 2002.
  - In contrast, the share of transactions below HK\$30,000 shrank from 30.1% in 2002 to 17.1% in 2003.



### *Trading Activities of Five Most Active Derivative Warrants by Underlying Stock*

15. By underlying stock, the trading of derivative equity warrants was concentrated on a few stocks. Derivative warrants issued on the 5 most active individual stocks contributed 61.6% to the total warrant turnover in 2002 and 31.6% in 2003. The decline was largely due to the increases in the contribution from trading of index warrants and exotic warrants. In addition, the underlying stocks of the 5 most actively traded derivative equity warrants were also actively traded on the cash market, contributing 25.4% to total equity turnover in 2003.

Transaction Value of Five Most Active Derivative Warrants by Underlying Stock						
Ranking	2002			2003		
	Company Name	Transaction Value (HK\$ bn)	% of Total	Company Name	Transaction Value (HK\$ bn)	% of Total
1	HSBC Holdings	39.20	17.4%	HSBC Holdings	56.67	10.7%
2	Hutchison Whampoa	27.14	12.1%	China Mobile	51.17	9.7%
3	China Mobile	26.20	11.6%	Hutchison Whampoa	31.25	5.9%
4	Cheung Kong Holdings	24.02	10.7%	Bank of China (HK)	14.48	2.7%
5	Sun Hung Kai Properties	22.03	9.8%	PCCW	13.19	2.5%
	<b>Top 5 Sub-total</b>	<b>138.60</b>	<b>61.6%</b>	<b>Top 5 Sub-total</b>	<b>166.75</b>	<b>31.6%</b>
	Other Equities	31.99	14.2%	Other Equities	69.60	13.2%
	Total Equities	170.59	75.8%	Total Equities	236.34	44.8%
	Index	48.13	21.4%	Index	190.56	36.1%
	Exotic	5.22	2.3%	Exotic	99.82	18.9%
	Others*	0.98	0.4%	Others*	1.30	0.2%
<b>Total</b>		<b>224.92</b>	<b>100.0%</b>		<b>528.03</b>	<b>100.0%</b>
Remark: Both buying and selling transactions have been counted in the calculation. * includes basket warrants and currency warrants Sources: SFC Research and HKEx						