



Looking Inside – Economic Impact

Exchange/CCP/CSD

Derrick Fung
Head, Clearing Division, HKEx

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My presentation aims to give some perspective on the issues during the Lehman crisis from the viewpoint of exchanges, CCPs and CSDs, using as a real-life example the key issues HKEx encountered in handling the default of Lehman Brothers in Hong Kong.



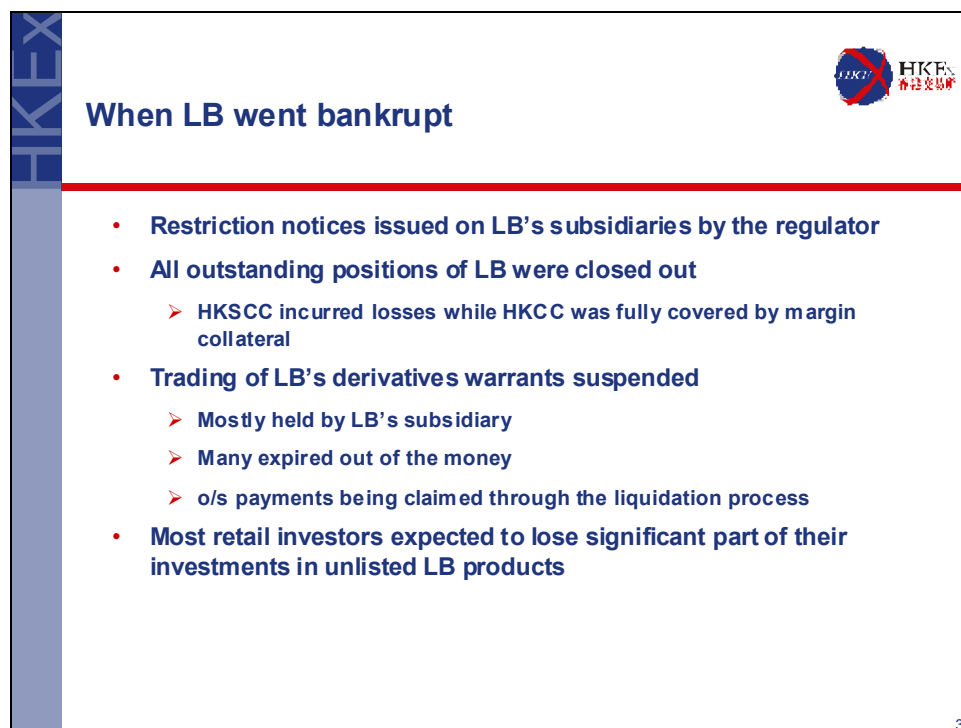
Lehman Brothers (LB) incident
- A major player in HKEx operated markets

- **LB traded on HKEx markets through local subsidiaries:**
 - ✓ Securities and Stock Options on The Stock Exchange of Hong Kong Ltd (SEHK)
 - ✓ Futures and Index Options on Hong Kong Futures Exchange Ltd (HKFE)
- **Clearing Participants (CP) in 3 clearing houses:**
 - ✓ Hong Kong Securities Clearing Company Ltd (HKSCC) for securities
 - ✓ The SEHK Options Clearing House Ltd (SEOCH) for stock options
 - ✓ HKFE Clearing Corporation Ltd (HKCC) for futures and index options
- **Issuer of structured products**
 - ✓ exchange listed products (mainly derivative warrants)
 - ✓ over-the-counter products (e.g. mini-bonds, equity-linked notes)

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Lehman Brothers (LB) was a major player in Hong Kong. It ranked 19th in the cash market in terms of turnover, with the top 20 participants contributing some 60% to 70% to total turnover. LB also was number 5 in the derivatives markets. It was a direct clearing participant in our three clearing houses in Hong Kong for securities, stock options, futures and index options.

LB was also an active issuer of structured products, although for derivatives warrants traded on the stock exchange, its market share was only 1% by notional value. In OTC products, Lehman Brothers was very successful with the sale of minibonds which were widely distributed to retail investors. 34,000 individual investors with an investment volume of HKD 30 billion (USD 2.6 billion) were affected in Hong Kong.



When LB went bankrupt

- **Restriction notices issued on LB's subsidiaries by the regulator**
- **All outstanding positions of LB were closed out**
 - HKSCC incurred losses while HKCC was fully covered by margin collateral
- **Trading of LB's derivatives warrants suspended**
 - Mostly held by LB's subsidiary
 - Many expired out of the money
 - o/s payments being claimed through the liquidation process
- **Most retail investors expected to lose significant part of their investments in unlisted LB products**

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When LB defaulted in the United States, restriction notices were served on LB subsidiaries in Hong Kong by our regulator. They were prohibited from conducting any regulated activities, e.g. trading of securities and derivatives on SEHK and HKFE.

However, at the insistence of the regulator, LB was also stopped from conducting any further securities settlement activity with our securities clearing house. In our market's T+2 settlement cycle, this meant that we had to close out two days' worth of open positions in the market. This was a big concern to HKEx, as a key assumption underlying our risk management measures was that brokers would maintain sufficient financial resources and liquid capital to fulfill their clearing house settlement obligations at all times in order to contain systemic risk.

In the derivatives markets, the closing out or the transfer of client positions to other market participants was allowed for two days (until LB failed to make margin payments). However, obtaining precise client instructions was apparently not feasible in such a short period of time.

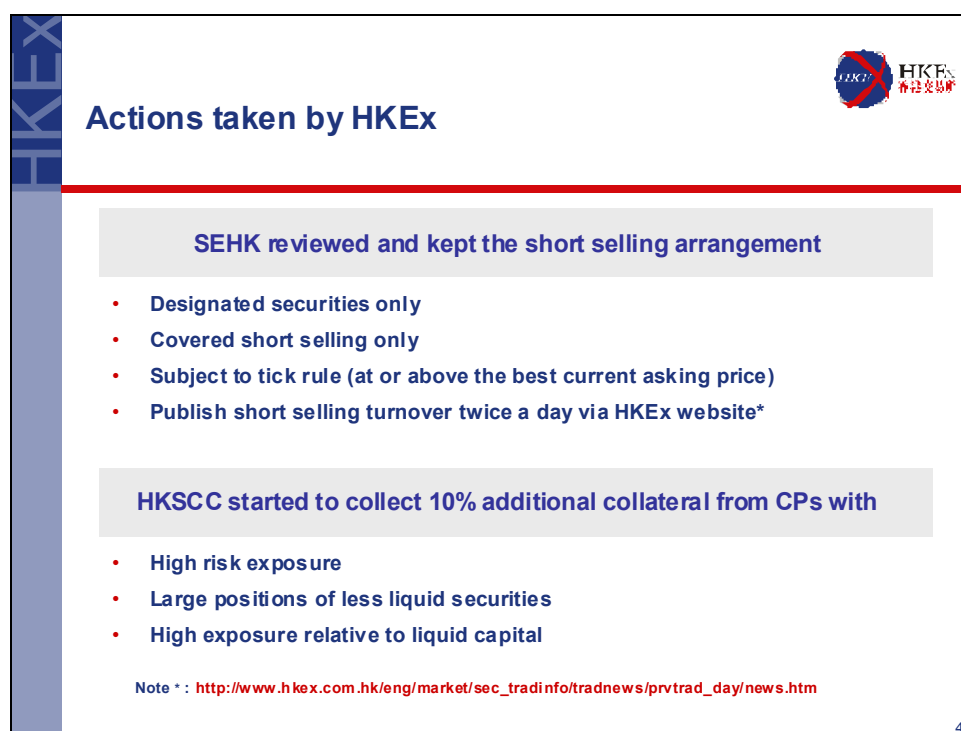
All open positions were closed out. This required liquidity of more than HKD 2.5 billion (USD 300 million) to fund the closing-out operations. In the end we had incurred a loss of HKD 160 million (USD 20 million) as the market moved against LB's positions. Only HKD 60 million (USD 8 million) were needed to support the closing out of derivatives open positions as those were fully covered by margin collateral.

Concerning outstanding exchange-listed derivatives warrants, they were suspended from trading immediately. At that point, we were very concerned about the issuer's risk and whether we had done enough in the past to make the issuer's risk transparent in the market. We did a lot in communicating the problems to our participants. Fortunately,

98% of all outstanding listed derivatives warrants were held by an LB subsidiary as liquidity provider and distributor. Only seven out of 134 warrants expired in the money with outstanding payments of HKD 1 billion (USD 135 million) of which only one percent were held by third parties.

For unlisted products – mainly the minibonds, which are obviously outside the scope of HKEx – there were concerns highlighted over the regulation of business conduct and selling practices of intermediaries involved in the sale of very complex unlisted investment products to retail investors. When LB failed, regulators received more than 20,000 complaint letters concerning minibonds – which turned out not to be ordinary bonds but complex credit-linked notes whose terms and conditions most investors did not understand. Investors demanded full redemption, claiming that they were misled into buying such products, having been told by the distributors that minibonds were risk free products, very similar to time deposits. It took almost 12 months for the regulator to come up with a settlement scheme with the banks that had distributed them, in which investors would receive back at least 60% to 70% of their invested principal amounts.

Recently, the regulators proposed certain measures to improve the intermediaries' conduct and the sales process in Hong Kong, to enhance investor protection. They are now looking into better investor education and a more effective and efficient dispute resolution mechanism.



Actions taken by HKEx

SEHK reviewed and kept the short selling arrangement

- Designated securities only
- Covered short selling only
- Subject to tick rule (at or above the best current asking price)
- Publish short selling turnover twice a day via HKEx website*

HKSCC started to collect 10% additional collateral from CPs with

- High risk exposure
- Large positions of less liquid securities
- High exposure relative to liquid capital

Note * : http://www.hkex.com.hk/eng/market/sec_tradinfo/tradnews/prvtrad_day/news.htm

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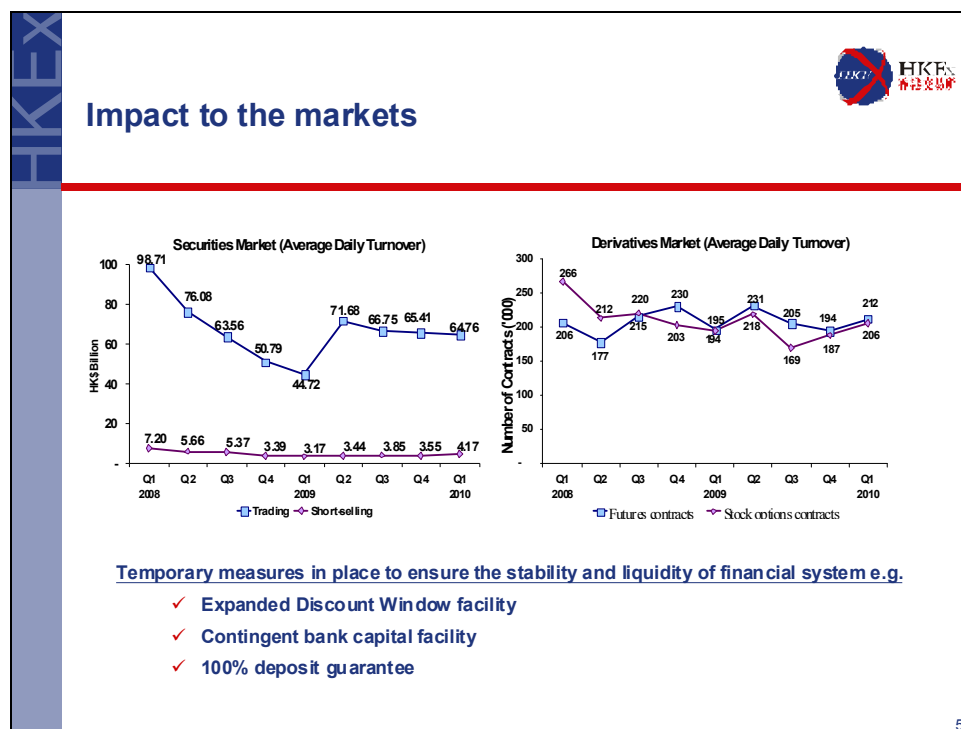
How did HKEX respond? Action was taken mainly in two areas, namely in short selling and collateral management.

Compared to other major markets like the US, UK, Australia and others, which put short selling bans in place as temporary measures and at short notice after the Lehman collapse, Hong Kong already had a strict short selling regime in place since after the 1998 Asian financial market crisis.

HKEx did a review and noted that the level of short selling activity in 2008 was quite stable at around 7% to 8% of daily turnover both before and after the collapse of LB. There was never any particular peak, neither in any stock nor in any one market

participant's trading patterns. No additional measures were taken and only recently the regulator was consulting the market on the possible public disclosure of short positions, with a view to further enhance market transparency.

In the area of risk management for the securities market, the loss that had resulted from our LB close-out raised concern over the validity of our risk management model in the cash market in the event of failure of another major participant. A temporary measure was put in place immediately to cover the risk exposure of HKSCC as a central counterparty. Additional collateral of 10% is now collected from certain clearing participants based on their gross long or short positions (whichever is higher). This, of course, increases the cost of doing business for our brokers.



Looking back from some distance, the impact of these measures on the markets was as follows:

- Average daily turnover dropped from early 2008 and only recovered half way six months after Lehman Brothers' collapse.
- Short selling dropped from 7% or 8% in 2008 to around 4% to 5% recently.
- Derivatives market activity dropped similarly while volatility has increased.
- The HKEx markets appeared to be resilient enough to take on the systemic pressure during the crisis. They were back to "business as usual" in late 2009.
- No major regulatory reform has yet been initiated, but we are closely monitoring regulatory developments in other countries.
- HKEx is currently re-assessing its risk management framework for the securities markets.