



HKEx Hosting Services Ecosystem Forum

Market Integrity

Bryan Chan

Co-Head of EFIC, Global Markets

20 March 2014



1 Overview & Background

2 Closing Auction Session

3 Circuit Breakers

4 Pre-Trade Risk Management

5 Timeline

Is This the Right Time to Reopen Market Structure Reform Discussion?



Market Integrity – What Has Changed?

	2000-10	2010-11	2012-14
Events	<ul style="list-style-type: none"> ■ Prevalence of electronic trading ■ Emergence of HFTs, hedge funds, and prime brokerage 	<ul style="list-style-type: none"> ■ 6 May 2010 “Flash Crash” 	<ul style="list-style-type: none"> ■ Knight Capital ■ Facebook IPO ■ China Everbright Incident ■ 4 NASDAQ outages ■ Hanmag options incident (KRX) ■ ASX system glitch
Regulatory Mindset	<ul style="list-style-type: none"> ■ Encourage technology innovation for productivity enhancement ■ Emergence of ATS, ECN and alternative trading venues ■ Best price execution for investors 	<ul style="list-style-type: none"> ■ Push for greater trade data transparency ■ Re-assess benefits of market fragmentation ■ Scrutiny of short selling 	<ul style="list-style-type: none"> ■ Greater scrutiny of risk management facilities of algos/electronic trading ■ Robustness of dependencies between inter-linked markets
Consequences	<ul style="list-style-type: none"> ■ Growth of electronic trading and faster speed of trading ■ Proliferation of HFTs: 61% of US stock market volume in 2009 ■ Market fragmentation ■ Establishment of DMA 	<ul style="list-style-type: none"> ■ Greater adoption of circuit breakers ■ Review of error trade cancellation rules ■ Tightening of short-selling 	<ul style="list-style-type: none"> ■ Mandating PTRM of market participants ■ Algo testing / “Know your algo” requirements ■ SFC’s new regulation on electronic trading

From de-regulation to re-regulation

Market Integrity – Why Do We Need It?

Closing Auction Session (CAS)

- High institutional demand
- Adopted by almost all major securities markets
- For cash market only
- Consultation expected in 2014

Circuit Breakers

- Protection of the market from disorderly volatility while not preventing normal price discovery
- For both cash and derivatives markets
- Consultation expected in 2014

Pre-Trade Risk Management (PTRM)

- Measures preventing submission of orders that could adversely affect market integrity
- Increasing focus from regulators and participants
- Project commencing late 2014; launch TBD

Plan the RIGHT Reforms at the RIGHT Time

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Why does the Market Need a Closing Auction Session?



HKEx Current Closing Mechanism

- Median of 5 snapshots prices in the last minute of trading

Importance of Closing Mechanism

- Determines closing price, which is used for portfolio valuations & benchmarking (e.g. index tracking funds)
- Significant equity flow requires execution at closing price
→ ~11% equity flow (incl. daily market on close and rebalancing orders)

Issues with Current Mechanism

- Closing price determined by a single price → Volume and supply/demand not considered
- EPs cannot execute Market on Close (MOC) orders at closing price due to current calculation methodology → tension between EPs and their clients
- Tracking error for index funds → Hamper return for investors

Brokers and Investors

- ✓ Allow execution at closing price
- ✓ Reduce tracking error
- ✓ Lower transaction cost
- ✓ Lower infrastructure cost and capacity requirements for brokers

Market

- ✓ Improve liquidity and lower market volatility at close
- ✓ Improve price discovery for less liquid stocks
- ✓ Enhance competitiveness
- ✓ Strengthen index product development

Closing Mechanism in International Markets

Region	Markets with CAS		Markets with Other Closing Mechanism
North America	<ul style="list-style-type: none"> ■ US ■ Canada 		-
Europe & Middle East	<ul style="list-style-type: none"> ■ Austria ■ Belgium ■ Denmark ■ Finland ■ France ■ Germany ■ Ireland ■ Israel 	<ul style="list-style-type: none"> ■ Italy ■ Netherlands ■ Norway ■ Portugal ■ Spain ■ Sweden ■ Switzerland ■ UK 	-
Asia-Pacific	<ul style="list-style-type: none"> ■ Australia ■ Japan ■ New Zealand ■ Korea 	<ul style="list-style-type: none"> ■ Singapore ■ Taiwan ■ Mainland (SZSE) 	<ul style="list-style-type: none"> ■ India (30-min VWAP) ■ Mainland (SSE) (1-min VWAP) ■ Hong Kong (medium of 5-snapshots nominal)

All 23 MSCI developed markets except Hong Kong have a closing auction

Note: Mainland, India, Korea and Taiwan are not classified as developed markets by MSCI

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Background

- Circuit breakers (CB) is an automated price volatility safeguard mechanism which offers a cool-off period during abrupt price volatility affecting market integrity
- Our market has discussed CBs from time to time before, with the conclusion being that they were not necessary and may cause unnecessary market interruption
- However, we have recently reconsidered CBs and formed a working group to conduct internal study and prepare market consultations

Why Now?

- **Proliferation of electronic trading** – including internet trading, algorithmic trading and direct market access that has increased the risk of disorderly trading
- **Trading incidents** – caused by erroneous orders creating over-reaction and hampered market integrity in overseas markets (e.g. 2010 Flash Crash)
- **Global trend** – various industry bodies (e.g. IOSCO) and overseas regulators/exchanges (e.g. SEC, ASIC, SGX) have called for and introduced circuit breakers in recent years

Benefits of Circuit Breakers

- ✓ Safeguard against disorderly trading (e.g. from technical glitches and erroneous trades)
- ✓ Give investors time to assimilate incoming information and make informed choices during periods of high market volatility
- ✓ Reduce reputational, operational, and financial risks to the Exchange, Exchange Participants and investors from unintended market volatility

International Practice of Circuit Breakers



Region	Cash Market			Derivatives Market		
	Exchange	Market Level CB	Instrument Level CB	Exchange	Market Level CB	Instrument Level CB
US	NYSE / NASDAQ	✓ (daily downside limit)	✓ (dynamic price bands)	CME	✗	✓ (daily price limits & dynamic price bands)
Europe	LSE / DB	✗	✓ (dynamic price bands)	Eurex	✗	✓ (dynamic price bands)
Asia	SGX	✗	✓ (dynamic price bands)	SGX	✗	✓ (daily price limits)
	TSE	✗	✓ (daily price limits & dynamic price bands)	OSE / TSE ¹	✗	✓ (daily price limits & dynamic price bands)
	KRX	✓ (daily downside limit)	✓ (daily price limits)	KRX	✗	✓ (dynamic price bands)
	SSE / SZSE	✗	✓ (daily price limits)	TOCOM	✗	✓ (daily price limits)

Note 1: The derivatives markets of OSE and TSE will be integrated into a single market effective March 24, 2014

1. Is circuit breaker needed for the HK market? Why?
2. Do we need a market level or instrument level circuit breaker?
3. If instrument level CB, which instruments should be subject to circuit breaker?
4. What reference price and triggering level should be used to trigger the circuit breaker?
5. Should trading be suspended or a cool-off period with trading within a price band be given after the circuit breaker is triggered ?
6. How should normal trading be resumed?
7. What market data would be required?
8. Should trading of linked securities or derivatives be allowed when the underlying is under circuit breaker?

The model chosen should suit Hong Kong market's specific circumstances

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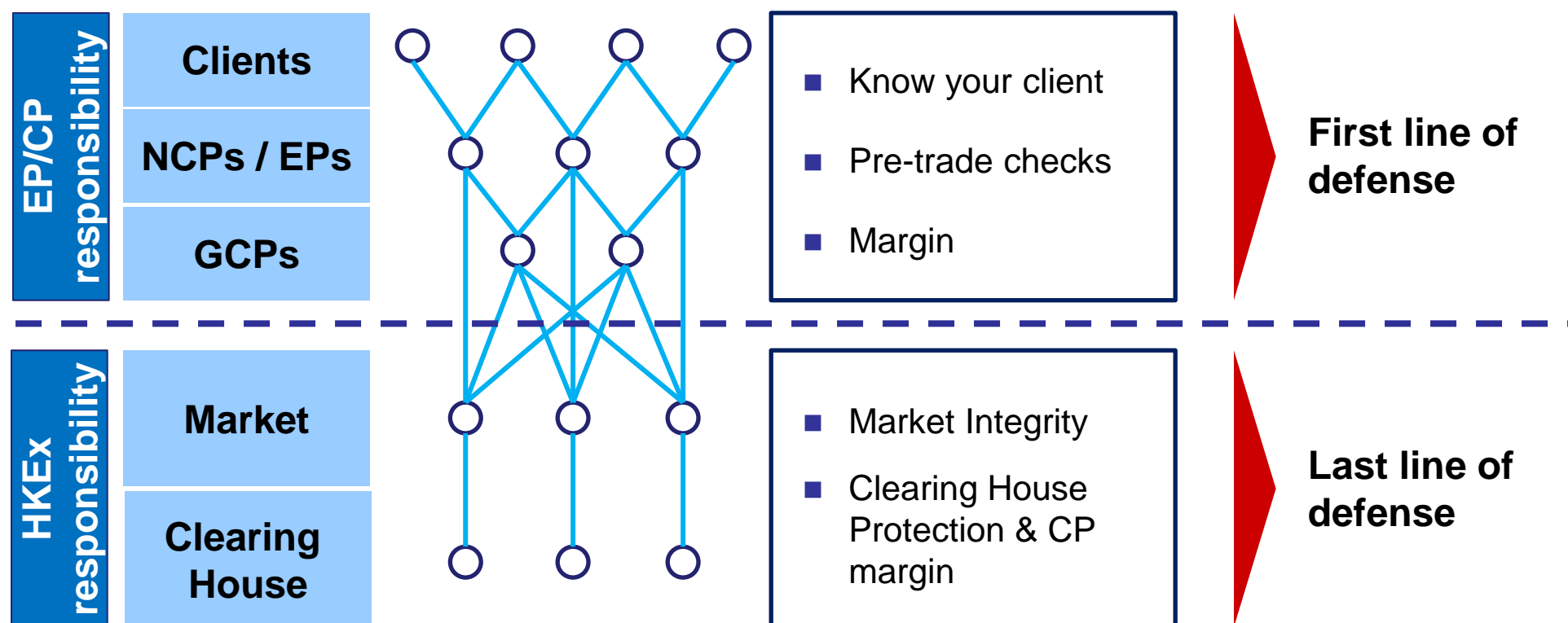
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Risk Management – Who's Responsibility Is It?

Following SFC regulation (paragraph 18.3 of the Code of Conduct) and IOSCO Principle 3 on DEA, the intermediary retains ultimate responsibility for all orders under its authority



Risk management involves several independent line of defenses and responsibilities

How Can An Exchange Facilitate Better Risk Management



		<i>Examples</i>	
<p>Clients</p> <hr/> <p>NCMs / EPs</p> <hr/> <p>GCPs</p>	<p>Information to Members</p> <hr/> <p>Member Control services</p>	<p>Participants need information from the exchange or clearing house to perform their own risk management</p> <hr/> <p>Controls support action (either for the participant themselves or for their clients) when risk reaches threatening levels</p>	<ul style="list-style-type: none"> • Drop copy • Position data • Risk data <hr/> <ul style="list-style-type: none"> • Alerts • Limits • Stop / kill • Cancel on Disconnect
<hr style="border-top: 1px dashed #000080;"/>			
<p>Market</p> <hr/> <p>Clearing House</p>	<p>Market Integrity Controls</p> <hr/> <p>Clearing House Risk Management</p>	<p>Controls support the “last line of defense” to maintain market integrity</p> <hr/> <p>Measures to manage counterparty credit risk</p>	<ul style="list-style-type: none"> • Fat finger checks • Duplicate orders • Price bands • Circuit breaker <hr/> <ul style="list-style-type: none"> • Margin
<p>Limitations for an exchange</p>	<ul style="list-style-type: none"> ■ We don't have the full picture - An exchange only sees its own markets ■ Limited granularity - An exchange doesn't know the end client 		

Exchange provided PTRM can complement but not replace intermediary systems

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**Closing Auction
Session &
Circuit Breakers**

Consultation expected in 2014

**Pre-trade
Risk
Management**

Project commencing late 2014; launch TBD

We will listen to your feedback and work with you to make Hong Kong a safer and better place to trade!



Questions and Answers