

2 June 2016



MEDIA WORKSHOP

CLOSING AUCTION SESSION

&

VOLATILITY CONTROL

MECHANISM

HKEX
香港交易所

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Agenda

1

Closing Auction Session (CAS)

2

Volatility Control Mechanism (VCM)

3

Rollout Preparation



Why introduce the two market microstructure changes?



Closing Auction Session

Meeting diverse trading needs of investors in our market

- High institutional demand for execution at the closing price
- Catching up with all developed and most developing securities markets
- For securities market only

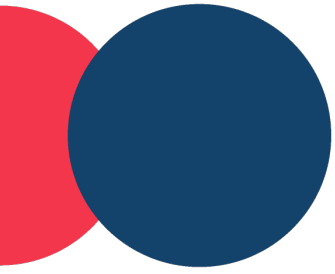


Volatility Control Mechanism

Safeguarding market integrity based on G20 & IOSCO's regulatory guidance

- Safeguarding market integrity from extreme price volatility arising from trading incidents such as "Flash Crash" and algo errors
- Containing systemic risks caused by interlinked benchmarking index products
- For both securities and derivatives markets

CAS and VCM are major microstructure upgrades to enhance Hong Kong market's overall competitiveness



CLOSING AUCTION SESSION (CAS)

Why CAS?

Why CAS

- **Significant equity flow requires execution at the closing price (an investment mandate for many passive funds)**
 - ~10% of equity flow on a daily basis
 - 30%+ on index rebalancing days
- **Closing price is used for portfolio valuations and benchmarking**

Issues without a CAS

- **Trades cannot be executed at closing price**
- **Higher tracking errors for index funds, hampering investment returns**
- **Exchange Participants (EPs) cannot execute at the closing price → Tension between EPs and investors**

Meeting market demand for execution at closing price



CAS is implemented in most developed and emerging markets

All Developed Markets*

With CAS (22):

- | | |
|-------------|---------------|
| ✓ Australia | ✓ Japan |
| ✓ Austria | ✓ Netherlands |
| ✓ Belgium | ✓ New Zealand |
| ✓ Canada | ✓ Norway |
| ✓ Denmark | ✓ Portugal |
| ✓ Finland | ✓ Singapore |
| ✓ France | ✓ Spain |
| ✓ Germany | ✓ Sweden |
| ✓ Ireland | ✓ Switzerland |
| ✓ Israel | ✓ UK |
| ✓ Italy | ✓ US |

Without CAS (1):

- Hong Kong

Most Emerging Markets*

With CAS (20):

- | | |
|-------------------|----------------|
| ✓ Brazil | ✓ Peru |
| ✓ Colombia | ✓ Philippines |
| ✓ Czech Republic | ✓ Poland |
| ✓ Greece | ✓ Qatar |
| ✓ Hungary | ✓ Russia |
| ✓ Indonesia | ✓ South Africa |
| ✓ Korea | ✓ Taiwan |
| ✓ Mainland (SZSE) | ✓ Thailand |
| ✓ Malaysia | ✓ Turkey |
| ✓ Mexico | ✓ UAE |

Without CAS (4):

- | | |
|---------|------------------|
| ▪ Chile | ▪ India |
| ▪ Egypt | ▪ Mainland (SSE) |

* Based on MSCI classification.

** Based on publicly available information. Please consult the relevant exchanges for more details or further updates if necessary

A new CAS model based on the consultation result will be implemented

Time	9:30-12:00; 13:00-16:00	16:00	16:01	16:06	16:08	16:10
Session	Continuous Trading Session (CTS)	Closing Auction Session				
Description	Reference price based on the median of 5-snapshot nominal prices in the last minute of CTS	Reference Price Fixing Period (1 min)	Order Input Period (5 mins)	No-cancellation Period (2 mins)	Random Closing Period (2 mins)	
		<ul style="list-style-type: none"> Calculate & publish reference price No Input, Cancel, Amend Afternoon session orders within price limit carried forward automatically 	Price Limit:	a 5% of Reference Price b Within lowest ask & highest bid		
			Order Type Allowed:	At-auction Order		
				At-auction Limit Order		
	Order Input, Cancellation & Amendment:	Input/Cancel/Amend Allowed		Input Allowed, Cancel & Amend Not Allowed		

Other New Measures

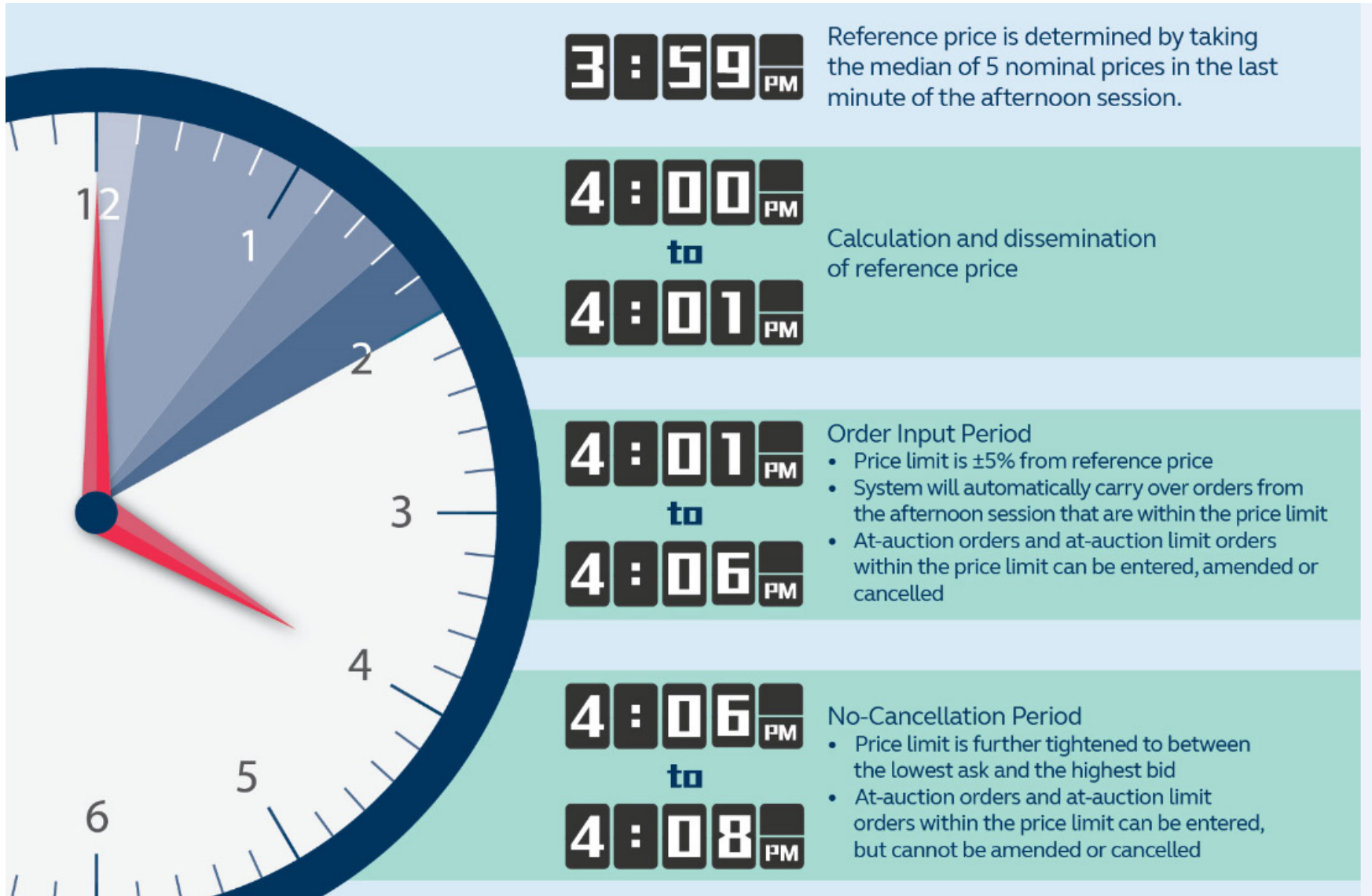
1. Better transparency by showing the limit for the Indicative Equilibrium Price, the 16:00 CTS closing and imbalance information (direction and quantity)
2. Will consider short selling with a price not below reference price in Phase 2
3. Allow matching of at-auction and at-auction limit orders at the reference price when an auction price cannot be determined



Four key features to facilitate investors trading

	Features	Descriptions
1	Price Limit	<ul style="list-style-type: none">▪ 1st stage: $\pm 5\%$▪ 2nd stage: Between lowest ask and highest bid
2	Random Closing	<ul style="list-style-type: none">▪ Auction matching ends randomly within the 2-minute period of 16:08 to 16:10, exact ending of the CAS determined randomly by the system
3	At-auction Limit Orders	<ul style="list-style-type: none">▪ All investors can input At-auction Limit orders throughout the CAS
4	Enhanced Auction Transparency	<ul style="list-style-type: none">▪ New information to be displayed: Order imbalance quantity & direction, upper & lower price limit, CTS closing price/reference price▪ Original information maintained: Indicative Equilibrium Price (IEP), Indicative Equilibrium Volume (IEV)

How does CAS work?



How does the market close in CAS?

Random close between 4:08pm and 4:10pm

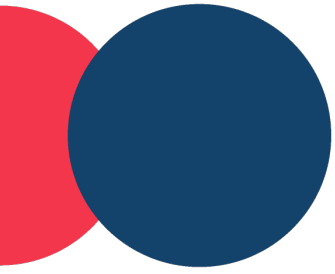


- The following 2 minutes is the Random Closing Period
- At-auction orders and at-auction limit orders can still be entered before the random close, but cannot be amended or cancelled
- Actual closing time is determined randomly by the system
- System will match all orders at the price where the highest volume can be traded

Phased rollout to different securities to ensure a smooth rollout

	CAS Phase 1	CAS Phase 2
Rollout date	Tentatively on 25 July 2016	Timing subject to review of Phase 1
Scope	<p>Major index stocks & all ETFs</p> <ul style="list-style-type: none"> • Constituent stocks of HS Composite LargeCap and MidCap indices • H shares with corresponding A shares listed on Mainland • All ETFs 	<p>All equities and funds</p> <ul style="list-style-type: none"> • All equities and funds (e.g. small caps, REITs, etc.)
	No equity and derivative warrants, CBBCs or debt securities	
Auction Model	No short selling	<p>May allow short selling With price not lower than reference price</p>
	Other auction features – tentatively, identical	





VOLATILITY CONTROL MECHANISM (VCM)

Why VCM?

G20 & IOSCO*

- Trading venues should have suitable VCM to deal with systemic risks arising from volatile market situations

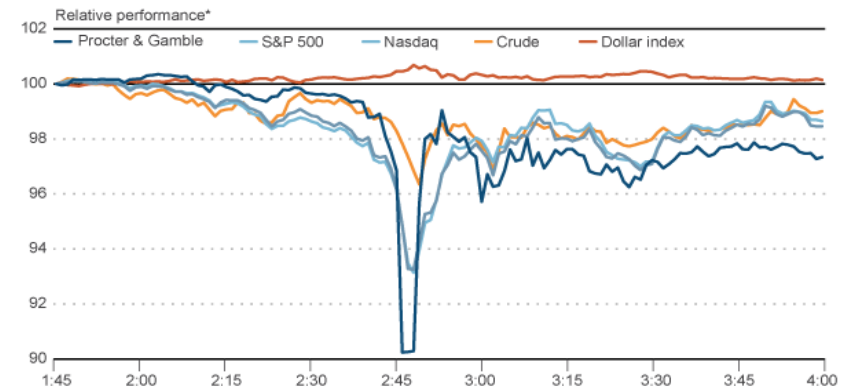
SFC

- Support HKEX to review VCM for safeguarding market integrity

International Practice

- Major US, European and Asian markets have developed VCMs over time, but not in Hong Kong

The plunge of May 6 2010



What happened

- Extreme price fluctuation started in individual instruments...
- ...triggering adverse snowballing effect / chain reaction due to interconnectedness of different asset classes and products...
- ...causing non-fundamental driven volatility in overall market
- ... leading to a loss in investor confidence and a series of regulatory and market review

It's our statutory duty to introduce a VCM to safeguard the Hong Kong market



VCM is implemented in major markets to safeguard market integrity

Country (Exchange)	Type of VCM Model	Triggering Point	Process & Resumption	Consideration for the HK Market	
US (All regulated exchanges)	Market-Level Circuit Breaker	7%, 13% and 20% drop in the S&P 500 Index	Suspend trading for all stocks in all market places for 15 minutes (7%, 13%) or for the whole day (20%)	✗ Significant impact by halting trading of the whole market	
	Stock-Level Dynamic Price Limit & Trading Limitation*	Type of Stocks	Triggering %	Multiple changes in trading method: 1. Trading within a price limit 2. Trading suspension 3. Auction 4. Back to CTS	✗ Model is too complex ✗ Require significant system changes
		Most liquid stock group > US\$3	5%		
		Less liquid stock group > US\$3	10%		
		US\$0.75 ≤ stock price ≤ US\$3	20%		
Stock price < US\$0.75	75% or US\$0.15				
Note: Rules vary for opening and close					
Europe (e.g. LSE)	Stock Level Trading Limitation	- 2 reference prices (auction price and last trade) - 10 different triggering levels for different securities	Switching from CTS to auction with random end and extensions	✗ Complex model with many trading disruptions (>100 triggers per day)	
Mainland (SSE / SZSE)	Stock-Level Static Price Limit	10% from previous close of the stock	A stock cannot move beyond ±10% in a day	✗ Not conducive to price discovery	
	Market level circuit breaker (suspended)	5% or 7% away from closing index of CSI300 index	Whole market suspension for 15 minutes (5% trigger) or whole day (7% trigger)	✗ Difficult to manage overnight risk	
Singapore (SGX)	Stock-Level Dynamic Price Limit	10% from last trade 5 minutes ago for stocks > S\$0.5	- Allow continuous trading as long as it is within the price limit - Multiple triggers allowed	✓ Relative simple model ✓ Well-received by the market	

*Trading Limitation: Mechanism with trade suspension followed by auction trading and then resumption to CTS.

** Based on publicly available information. Please consult the relevant exchanges for more details or further updates if necessary.

Based on market feedback, a simple and light-touch model would be most suitable for HK

Intended to...

- Prevent drastic events such as algorithm errors/flash crash which may cause systemic risks
- Offer temporary cooling-off period and allow trading within a band during the cooling-off; normal trading to resume afterwards

Not a...

- Circuit breaker or trading halt to suspend trading
- Daily price limit for individual stocks

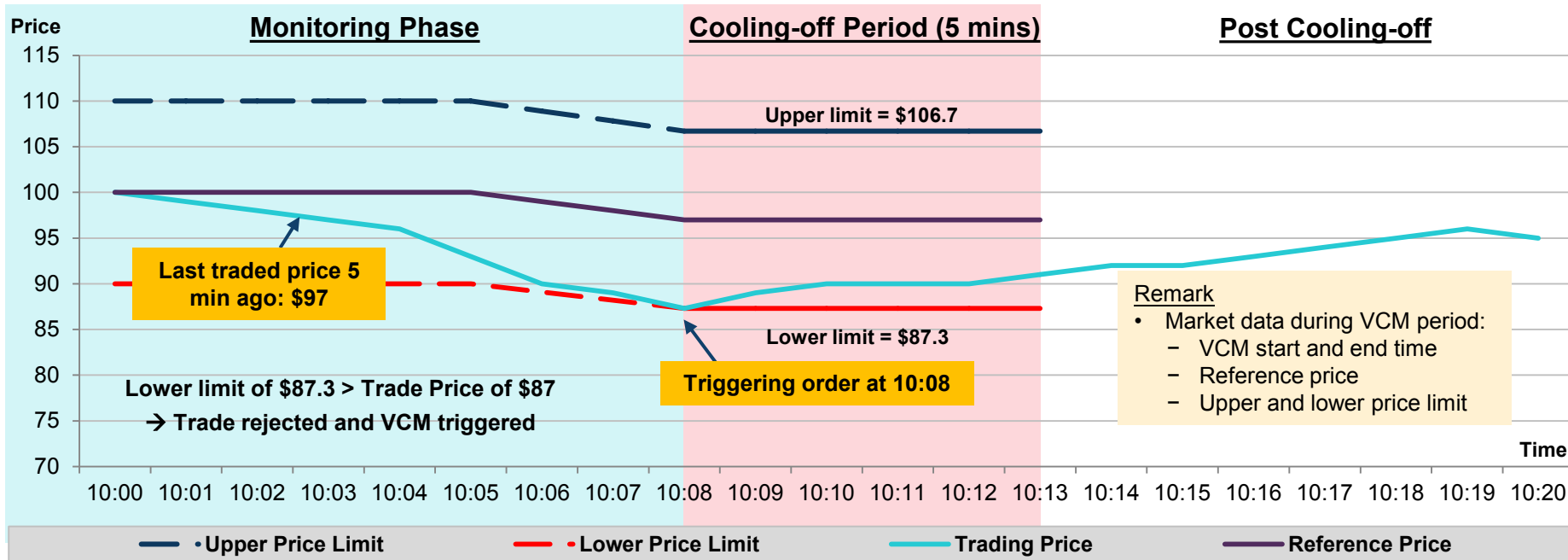
A simple light-touch approach to balance market protection and trading with no limits

- Instrument level only and applicable to key HSI & HSCEI constituent stocks (81) and related index futures contracts (8)
- Reference to a dynamic price (last trade 5-minute ago) to capture rapid and large price movements; 5-minute trading within band when triggered; normal trading resumes afterwards
- Exclude auction sessions (Pre-opening Session (POS) & CAS), first 15 minutes of the CTS and the last 15 minutes of the last CTS
- Max of 1 trigger in each CTS for each instrument (i.e. 1 in the morning session and 1 in the afternoon session)

How does VCM work?

Scope of securities / derivatives products	<ul style="list-style-type: none"> ▪ Securities: HSI & HSCEI constituent stocks (currently 81 stocks) ▪ Derivatives: HSI Futures (HSI), Mini-HSI Futures (MHI), H-shares Index Futures (HHI) and Mini H-shares Index Futures (MCH) spot month and the next calendar month contracts (currently 8 contracts) ▪ No plans to include more instruments which would be subject to the VCM.
Triggering Point	<ul style="list-style-type: none"> ▪ Triggering level: $> \pm 10\%$ from the reference price for securities market $> \pm 5\%$ from the reference price for derivatives market ▪ Reference price: Last trade 5 minutes ago

Illustrative example by using the trading of an applicable VCM stock during CTS (excluding first 15 minutes of morning and afternoon sessions and last 15 minutes* of the afternoon session)



* Since a VCM trigger will last for 5 minutes, the monitoring will stop 20 minutes before end of continuous trading session (CTS).



HKEX's "light-touch" approach is evidenced by the back-test statistics in the past 9+ years

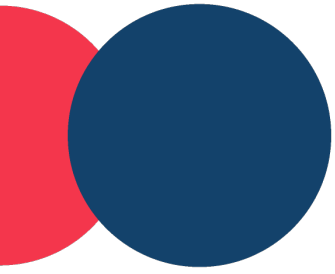
Cash Market

- No trigger for most years including
 - 2015 (when China market surged in April and May, during which HKEX observed record turnover)
 - Jan 2016 (when global financial markets experienced significant downturn)
- ~ Once a month trigger across all applicable securities for the most volatile years such as:
 - 2007 (due to the through train speculation)
 - 2008 (due to US subprime mortgage crisis leading to the bankruptcy of Lehman Brothers and global financial crisis)

Derivatives Market

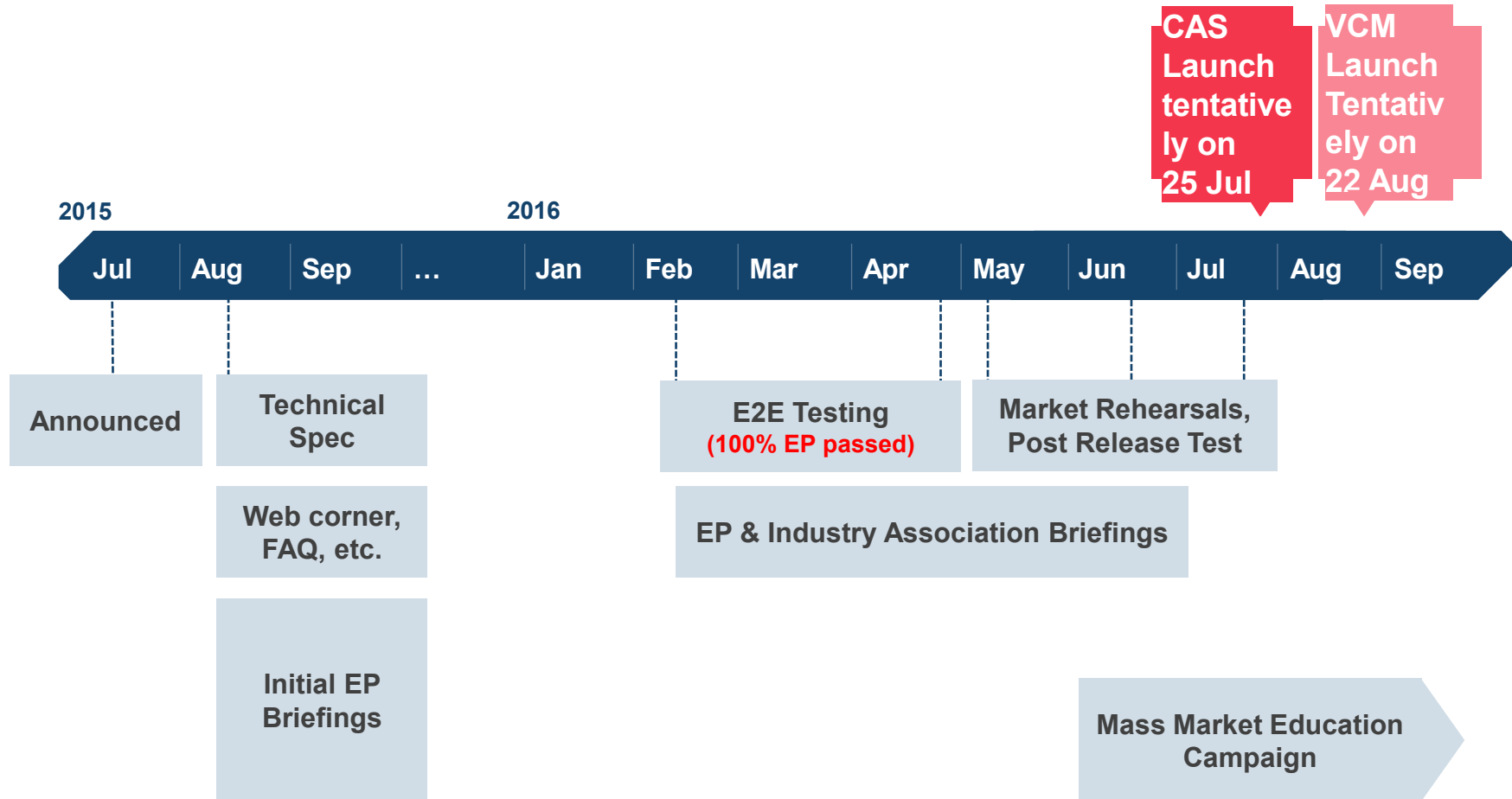
- 2 triggers over the entire period





ROLLOUT PREPARATION

HKEX has actively engaged the market to ensure market participants will be ready for the launch



Reaching out to more than 2000 industry practitioners via briefings and seminars

More than 10 sessions of Exchange Participants (EP) briefings reaching out many industry practitioners



Series of seminars/luncheons with industry associations

- CPT seminars for broker associations
- Vendor seminars to their clients
- Seminar with HKSI

Dedicated communication and support for market participants

- Circulars, information and technical documents
- Web corner and weblinks
- Support enquiry hotlines and email address

Conducting media workshop and interviews to promote investor awareness

Hong Kong Rejoins Developed Market Bourses With Closing Auction

HK REINTRODUCES CLOSING-AUCTION
Starts July 25

- 10-Minute Trading Session
- Limits Price Moves
- Closes Randomly in Last 2 Mi

收市競價時段

路透引述消息人士指出，港交所（00388）已訂於7月25日重推收市競價交易時段（俗稱U盤）。港交所發言人指出，已與經紀舉行端對端測試，月底起至6月會舉行市場演習，確實日期會在市場準備就緒後確定。

港交所於2008年5月曾引入競價時段，但多隻股份曾遭「舞高弄低」，機制被市場嘲諷為「動假時段」，其中經典是滙控（00005）於2009年3月融海嘯期間，於競價時段曾被推低至33元，間令當時的U盤被取消。

港交所在去年7月發表的諮詢總結，再次將U盤引入市場，但新機制設有價格限制，避免股份價格過分波動。

新U盤機制將分階段實施，首階段包括恒生

【香港商報訊】記者莊海源報道：港交所（388）向市場參與者發出通告，在完成市場演習及修訂相關規則後，收市競價時段首階段暫定於7月25日實施。首階段將包括所有恒生綜合大型股指數及中型股指數的成分股、在中國內地證券交易所所有相應A股的H股、以及所有交易所買賣基金。而俗稱「冷靜機制」的證券市場調機制，暫定於8月在收市競價首階段穩定期之後推行，確實日期稍後公布。

將安排兩次市場演習

港交所表示，端對端測試於昨天（4月22日）結束。所有使用經紀自設系統（BSS）進行交易的交易所參與者，於4月25日或之前將測試結果遞交交易所——現貨交易。為了讓交易所參與者進一步核實收市競價及市調機制已準備就緒，港交所將於5月28日及6月11日安排兩次市場演習。所有交易所參與者必須參加第一次市場演習。而未能成功通過第一次市場演習的交易所參與者則必須參加第二次市場演習。有關市場演習的細節及活動日程表將於5月通知交易所參與者。

港交所提醒，交易所參與者AMS開放式網連接器（OG）的支援將於6月後終止。為了讓交易所參與者更好地準備市場演習和收市競價交易時段首階段的實施，香港交易所安排於5月6日、10日及12日舉行三場簡報會。

U盤傳七月推 配合深港通

市場消息指，港交所（388）將於7月25日（星期一）重推收市競價時段（俗稱U盤）。港交所未有證實傳聞，但表示已與證券行作測試，5月底起至6月將舉行市場演習。分析指，U盤的推出日子，或是為了配合深港通的啟動時間，估計深港通有望在U盤推出前後正式開車。

港交所回應指，U盤早已落實於今年第三季實施，確實日期會在市場準備就緒後確定。港交所已與證券行作為期兩個月的端對端測試，並將於本周五結束。5月底起至6月將與市場演習節制（俗稱冷靜期）一併舉行演習，稍後會再公布詳情。

今次U盤將增設5%價格限制，輸入買賣時段為5分鐘，令收市競價時段從前兩分鐘，於下午4時10分結束。首階段會先涵蓋恒生綜合大型股及中型股指數成分股、AH股和所有交易所買賣基金

適逢期指結算前夕
U盤重開7年拖土重來，為何會選擇在7月25日期指結算前夕推出呢？市場人士指，港交所決意推出U盤，有傳

收市競價時段操作機制

U盤及冷靜機制可在第三季順利推出，有助「敞開客（clear the way）」迎接「深港通」。

市場科主管李國強

- 16:01 進入收市競價交易時段的輸入買賣盤時段（5分鐘）**
 - 價格限制在參考價的上下5%。
 - 批准的買賣盤類別為競價限價盤。
 - 可輸入、取消及更改買賣盤。
- 16:06 進入收市競價時段的不可取消時段（2分鐘）**
 - 價格限制在最低沽盤價與最高買盤價之間。
 - 競價盤為新輸入的競價限價盤。
 - 可輸入買賣盤，不可取消及更改。
- 16:08 進入隨機收市時段**

收市競價重推料利基金

港交所推動「深

第1階段：涵蓋恒生綜合大型股指數、恒生綜合中型股指數成分股、內地有相應A股的H股及所有交易所買賣基金。

第2階段：涵蓋所有基金，不啻性產品及債券，同時符合賣空的賣空。

港交所表示，端對端測試於昨天（4月22日）結束。所有使用經紀自設系統（BSS）進行交易的交易所參與者，於4月25日或之前將測試結果遞交交易所——現貨交易。為了讓交易所參與者進一步核實收市競價及市調機制已準備就緒，港交所將於5月28日及6月11日安排兩次市場演習。所有交易所參與者必須參加第一次市場演習。而未能成功通過第一次市場演習的交易所參與者則必須參加第二次市場演習。有關市場演習的細節及活動日程表將於5月通知交易所參與者。

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收市競價時段簡介

項目	時間
輸入買賣盤時段	16:01:00 - 16:05:00
不可取消時段	16:06:00 - 16:08:00
隨機收市時段	16:08:00 - 16:09:00



Launching a mass educational programme targeting the investing public



HKEX 香港交易所

What is the Closing Auction Session (CAS)?

More opportunities to get your order executed | Meet market demand for trade execution at opening and closing prices

Key Highlights

- Trading hours extended for a closing auction
- The price that best matches the total volume of orders will be the closing price
- Can trade by specifying their price for execution at the opening and closing prices

The CAS Model

Reference price is determined by taking the average of opening price in the last minute of the after-noon session

Calculation and dissemination of reference price

Order Book Period

- Continued order book with reference price
- Order book automatically cancelled after 10s
- The difference between the order book and the reference price will be cancelled, awarded or cancelled

Price Calculation Period

- Price is determined by reference to:
 - Order book
 - Market orders and orders from different orders and orders from different orders
- Order book is cancelled

Random Closing

The following 1 minute is the Random Closing Period

- All orders placed and all orders that orders are still to be entered before the random close, but cannot be executed
- Actual closing time is determined randomly by the system
- System will match all orders at the price where the highest volume can be traded

Launch Dates

Phase 1
25 July 2016
Applicable to constituents of Hang Seng Composite LargeCap and MidCap indexes, A+H shares and all ETFs

Phase 2
The launch of Phase 2 will be subject to the review of Phase 1
Applicable to all equities and funds

Excludes debt securities, derivative securities and EBCs

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What is the Volatility Control Mechanism (VCM)?

VCM is NOT a trading halt, nor is it designed to limit the up and down of price of stock or futures contract due to fundamental events

Objectives

- Prevent adverse price volatility arising from trading irregularities and algorithmic orders
- Enable system-wide control to international securities and derivatives market
- Reduce a fat and sticky market

Market Protection | **Trading Interruption**

A simple and light-touch approach to balance market protection and trading interruption

What instruments are covered under the VCM?

- VCM is applicable to all HKEX listed stocks
- It is not covered under futures contracts

When does the VCM apply?

- The closing off period is the last 10 minutes of the trading session
- The closing off period is the last 10 minutes of the afternoon session
- VCM applies to the morning and afternoon sessions
- The first 10 minutes of each session and the last 10 minutes of the afternoon session

VCM Illustration

HKEX 香港交易所

ENG · 繁體 · 简体

VCM

A cooling-off period during abnormal price fluctuations

The Volatility Control Mechanism (VCM) will cool the market for five minutes when there are abrupt price changes on individual stocks or futures. Starting 22 August 2016.

Starting 22 August 2016

VCM begins in the securities market in 82 days

The VCM is tentatively set to roll out in the derivatives market in the fourth quarter of 2016

See how trading continues, even when the VCM is triggered!

What is the Volatility Control Mechanism (VCM)?

Which securities and futures contracts are covered under VCM?

What is the applicable period for VCM?

[Find out more](#) → [Securities Market](#) → [Derivatives Market](#)

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SFC and HKEX are fully committed in detecting and deterring possible market manipulation

Joint-HKEX/SFC
surveillance system
enhancement program

Customised
surveillance tools for
monitoring and
detecting possible
trading irregularities in
CAS and VCM

SFC-HKEX's joint effort
on real-time and
ongoing market
surveillance and
enforcement

Key dates, useful links and enquiry information



Tentative
Launch Date
25 July



Tentative
Launch Date
22 August

HKEX's CAS and VCM Microsites

CAS www.hkex.com.hk/cas

VCM www.hkex.com.hk/vcm

Designated Web Corner

Securities Market www.hkex.com.hk/eng/market/sec_tradinfra/vcm_cas/vcm_cas.htm

Derivatives Market www.hkex.com.hk/eng/market/dv_tradinfra/vcm.htm

Enquiries

Securities Market AMS3Info@hkex.com.hk 2840 3626

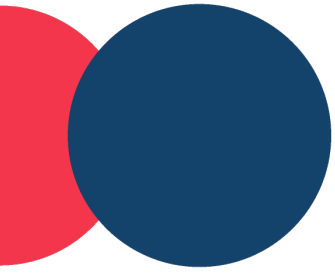
Derivatives Market ClickSupport@hkex.com.hk 2211 6360

Market Data/OMD-C related IVSupport@hkex.com.hk 2211 6558

Demo sessions



Questions & Answers



APPENDICES

Appendix 1: Current closing mechanism

Illustration

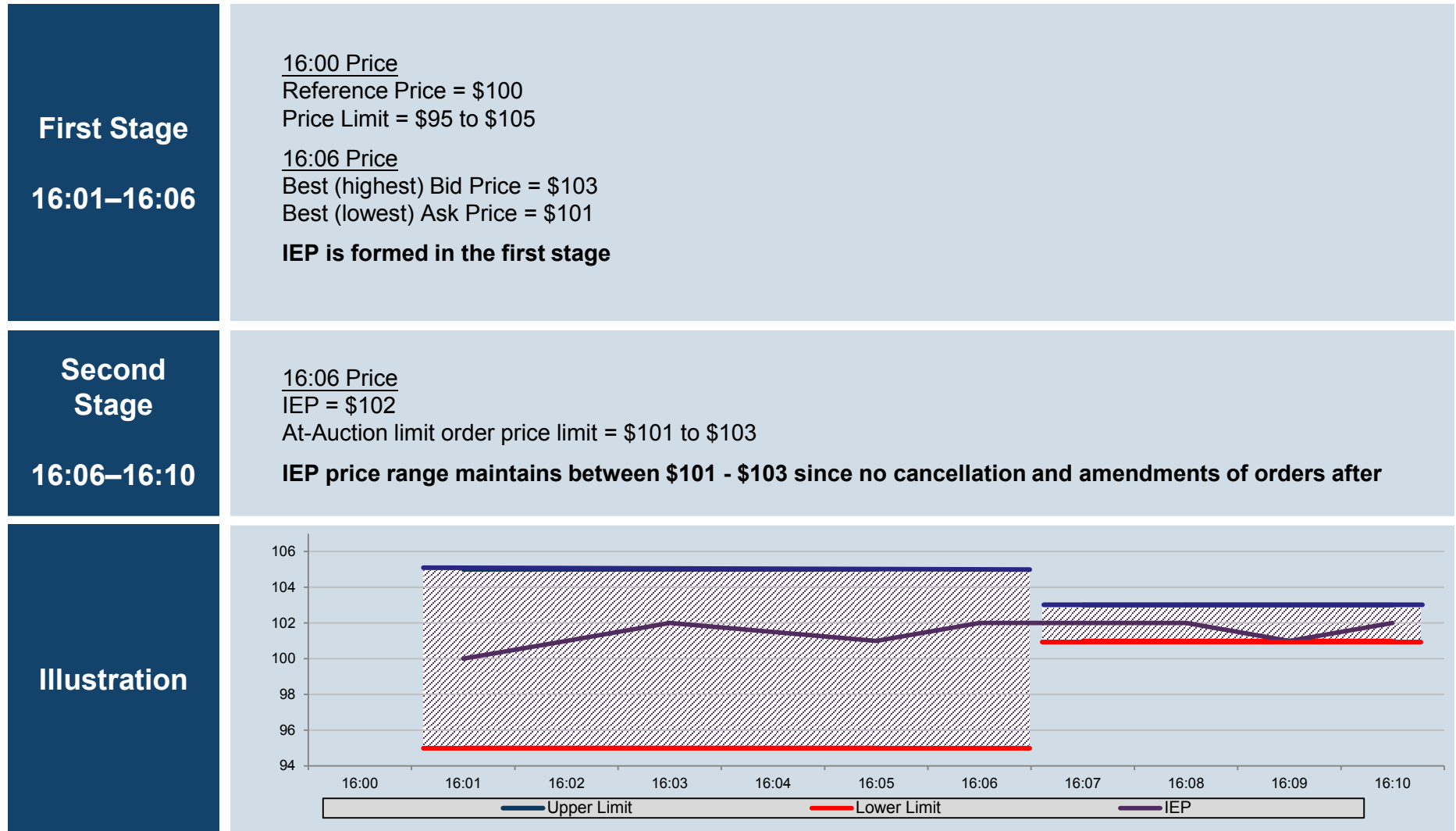
Current closing mechanism

Taking the median of 5 nominal prices in the last minute of the CTS as the closing price

Snapshot	Time	Bid Price	Ask Price	Last Recorded Price	Nominal Price
1.	3:59:00 pm	\$39.40	\$39.50	\$39.50	\$39.50
2.	3:59:15 pm	\$39.40	\$39.50	\$39.50	\$39.50
3.	3:59:30 pm	\$39.30	\$39.40	\$39.50	\$39.40
4.	3:59:45 pm	\$39.30	\$39.40	\$39.40	\$39.40
5.	4:00:00 pm	\$39.20	\$39.30	\$39.30	\$39.30

▶ Median price = \$39.40 as closing price

Appendix 2: Examples of price limit in CAS



Note: Taking the median of 5 nominal prices in the last minute of the CTS to be the reference price, bid/ask orders cannot deviate more than 5% from the reference price in first stage.



Appendix 3: Applicable period for VCM#

Securities Market		Period	09:00-09:30	09:30-09:45	09:45-12:00	Lunch Break				13:00-13:15	13:15-15:45	15:45-16:00	16:00-16:10
		VCM Applicable?	POS	Morning Session			Afternoon Session			CAS			
First Reference Price		x	x	Last traded price 5 minutes before 9:45*			x	Last traded price 5 minutes before 13:15*		x	x		
Derivatives Market		Period	08:45-09:15	09:15-09:30	09:30-12:00	12:30-13:00	13:00-13:15	13:15-16:15		16:15-16:30			
		VCM Applicable?	POS	Morning Session			POS	Afternoon Session					
First Reference Price		x	x	Last traded price 5 minutes before 9:30*			x	Last traded price 5 minutes before 13:15*				x	

Auction Session Continuous Trading Session

POS = Pre-opening Session in the securities market or Pre-Market Opening Period in the derivatives market



#Time shown above is not drawn to scale.

*If there is no trading in the POS and after market open, the first trade will become the first reference price.