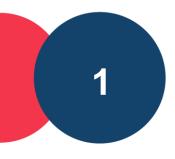
# **RMB CURRENCY OPTIONS**

Your New Option to Manage RMB Risks

US Dollars vs Renminbi (Hong Kong) ("USD/CNH") Options



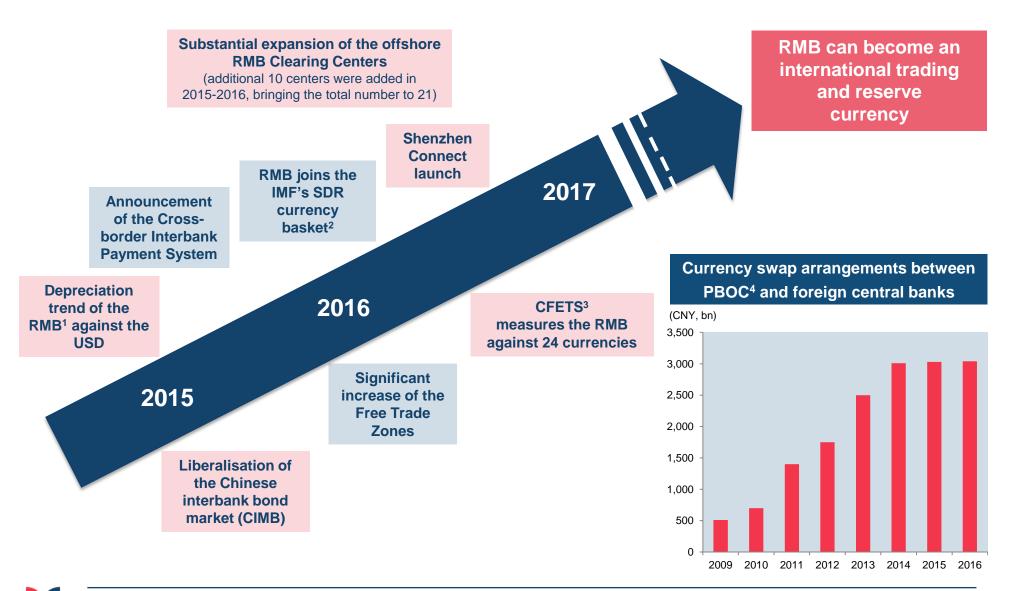
January 2017



# HKEX FIC MARKET UPDATE AND INTRODUCTION OF US DOLLARS VS RENMINBI (HONG KONG) ("USD/CNH") OPTIONS

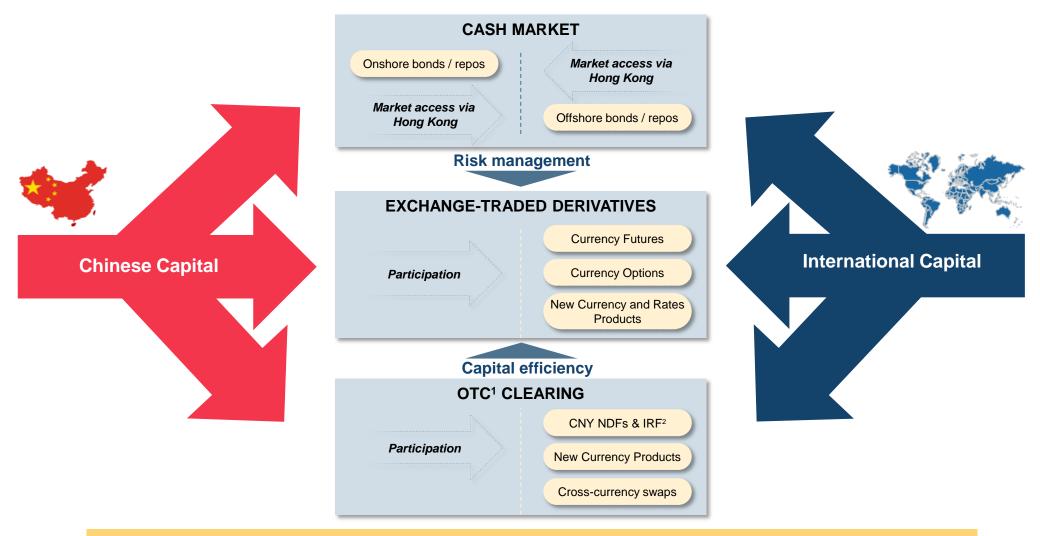


# **RECENT DEVELOPMENTS OF RMB INTERNATIONALISATION**



Note 1: Renminbi; Note 2: International Monetary Funds' Special Drawing Rights basket Note 3: China Foreign Exchange Trade System; Note 4: People's Bank of China Source: KPMG, Going Global report, 2017

# HKEX FIXED INCOME AND CURRENCY ROADMAP



**Onshore Access with a Comprehensive Suite of FIC Derivatives on Chinese Assets** 

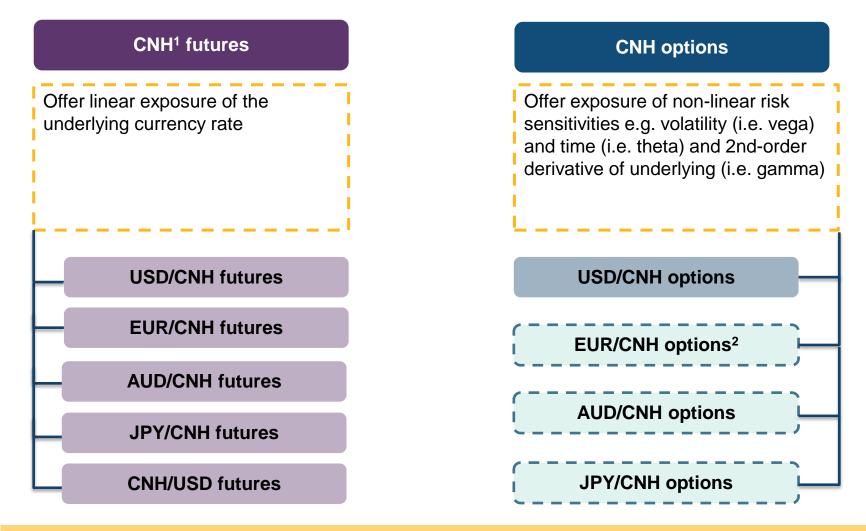


# **ADVANTAGES OF EXCHANGE-TRADED RMB DERIVATIVES**

	RMB OTC Derivatives	RMB Exchange-Traded Derivatives
Central Clearing	Bilateral and no central clearing	Central clearing counterparty on both sides of transactions
Credit and Collateral	Need to <b>negotiate credit lines</b> and collateral arrangements with banks	Margin-based and cash collateral is accepted
Settlement Risk	RMB is not a CLS <sup>1</sup> -eligible currency, therefore cannot utilise the CLS system for position netting	<b>Position netting</b> is <b>available</b> for exchange traded derivatives
Documentation	Bilateral documents such as ISDA <sup>2</sup> and CSA <sup>3</sup> are required	Only account opening documents are needed
Capital Efficiency	Relatively <b>lower</b> capital efficiency	Enhanced capital efficiency



### HKEX WILL OFFER A COMPREHENSIVE SUITE OF CURRENCY DERIVATIVES



#### More currency products to come

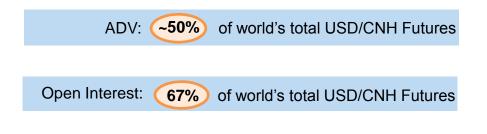


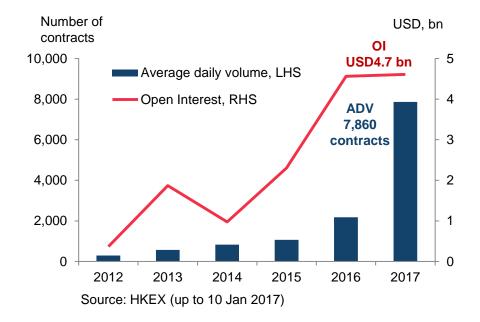
Note 1: Offshore Renminbi

Note 2: HKEX may consider introduction of EUR/CNH, AUD/CNH, JPY/CNH options going forward, subject to market demand and readiness

# **HKEX USD/CNH FUTURES: THE WORLD'S MOST LIQUID USD/CNH** CONTRACT

### Best Volume and Best Open Interest<sup>1</sup>





#### Best Distribution<sup>1</sup> – Connected to 100+ Brokers

8 Market Makers					
BOC	ICBC				
HSBC	DBS				
BAML	Virtu Financial				
Bank Sinopac	Haitong				

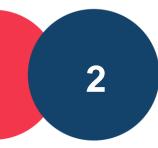
Top Price Takers					
Prop Trading	Hedge Funds				
FI Prop Desks	QDII Mutual Funds				
SMEs	Asset Managers				
Retails	Corporate Treasury				
HNWs	Im/Export Corps				
	Large Corps				

#### 2017 New Records – 20,338 contracts

Single-Day turnover of 20,338 contracts (US\$2bn) on 5 Jan

Open Interest record of 46,711 contracts (US\$4.7bn) on 4 Jan

Night-Session record 3,642 contracts (US\$360mn) on 4 Jan



# **PRODUCT RATIONALE**



### RMB'S NEW ERA: TWO-WAY VOLATILITY DRIVES DEMAND FOR CNH OPTIONS

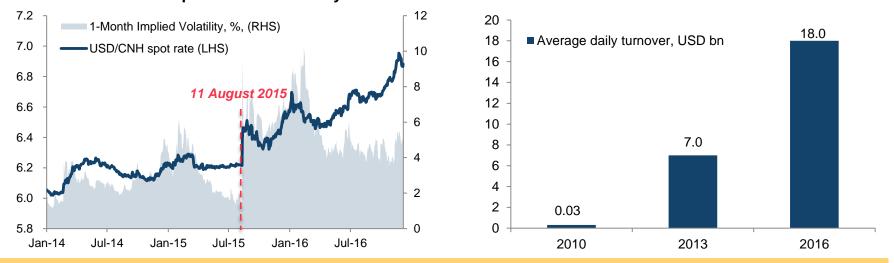
### **RMB's Volatility**

- A new market-based managed floating framework for RMB was introduced by PBOC on 11 August 2015<sup>1</sup>. It reflects:
  - the previous close of the CNY rate
  - market supply and demand with reference to baskets of currencies
- After 11 August 2015 the 1-month implied volatility of the USD/CNH rate increased to 4-10%.

USD/CNH spot rate and volatility

#### **OTC CNH Options Market**

- A sizeable OTC CNH options market already exists
  - Average daily trading volume of US\$15-20bn<sup>2</sup>
  - Average transaction size US\$150m<sup>2</sup>
- Nowadays the majority of volatility risks are in the form of OTC vanilla options.
  - A substantial amount (about USD100bn+) of USD calls/call spreads were placed on the market since August 2015.



#### **OTC RMB Options**

#### Exchange-Traded Currency Options provide price transparency and reduce counterparty risks

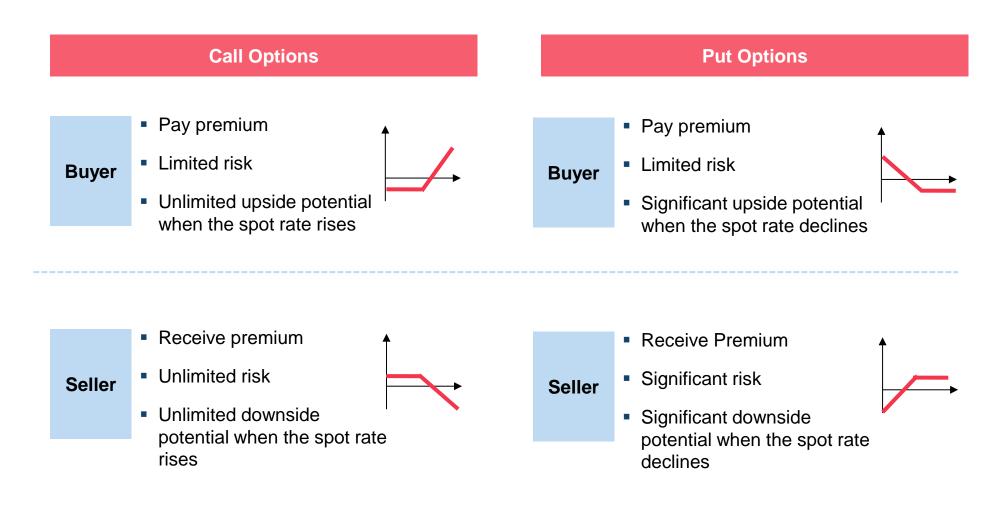
Note 1: PBOC, "The PBC Announcement on Improving Quotation of the Central Parity of RMB against US Dollar", 11 August 2015 Note 2: Data in 2016 Source: Bloomberg, Bank of International Settlement, HSBC, Deutsche Bank

# **ADVANTAGES OF HKEX USD/CNH OPTIONS<sup>1</sup>**

Flexible Risk Management	<ul> <li>A versatile tool due to options' unique risk and reward profile</li> <li>A variety of options / futures strategies deployable</li> <li>Exposure to multiple market parameters, e.g. spot rate, volatility and time</li> </ul>
Suitable for various RMB Market Conditions	<ul> <li>Flexibility of strategies for various market conditions</li> <li>Can be utilised in bullish, bearish, range-bound or volatile markets</li> </ul>
Leverage <sup>1</sup> & Cost Effectiveness	<ul> <li>Trading on an option premium and margin basis, requires upfront payment of a fraction of notional value</li> <li>The trading fee is waived for the first six months; No SFC levy</li> </ul>
Transparency and Efficiency	<ul> <li>Exchange-traded options are standardised, orderly and transparent</li> <li>Real-time prices are available on HKEX website and other information vendors</li> </ul>

Note 1: Currency options and leverage are of high risk and not suitable for inexperienced investors or people who are less risk tolerant. For further 10 information, please refer to HKEX website

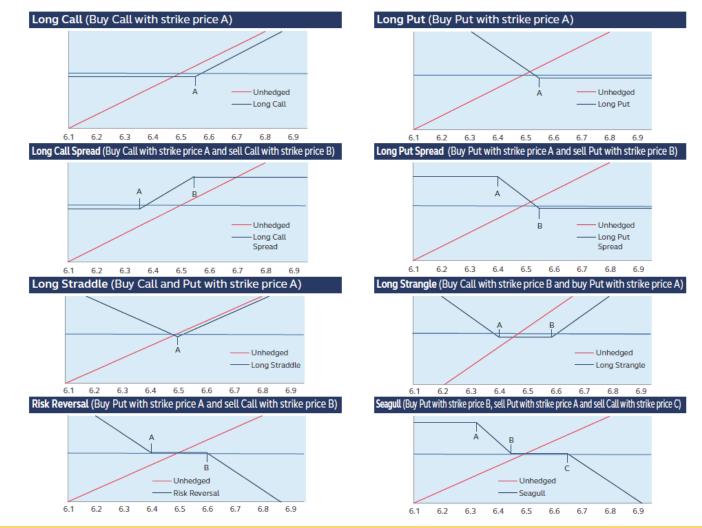
# USD/CNH OPTIONS – CALL AND PUT OPTIONS PAYOFF DIAGRAMS<sup>1</sup>



Options give a buyer the right (but not the obligation) to buy (or sell) an asset at a pre-determined price; and a seller the obligation (but not the right) to buy (or sell) an asset at a pre-determined price

# COMMON OPTIONS TRADING STRATEGIES

DIAGRAMS OF THEORETICAL PAYOFF IN CNH, TRANSACTION COSTS ARE NOT INCLUDED



Options trading strategies are not limited to the above examples. Investors can also combine USD/CNH Futures with USD/CNH Options to construct various strategies.

# **KEY CONTRACT SPECIFICATIONS OF THE USD/CNH OPTIONS**<sup>1</sup>

HKATS Code	CUS					
Contract Size	USD 100,000					
Price Quotation	Amount of RME	Amount of RMB per USD				
Options Premium	4 decimal place	es (eg. 0.0001)				
Tick Value	RMB 10					
Strike Prices	Strike intervals	will be set at intervals of 0.05				
	±10% from the	at-the-money Strike Price				
Official Settlement Price	USD/CNY(HK) Association (TM		the Expiry Day by the Hong Kong Treasury Markets			
Settlement on Exercise	Physical delive	ry on Exercise				
		Holder	Writer			
	Call Options	Payment of the Final Settlement Value* in RMB	Delivery of US dollars			
	Put Options         Delivery of US dollars         Payment of the Final Settlement Value in RMB					
	* Final Settlement Value is the Strike Price multiplied by the Contract Size; applies to both Call and Put options					
Exercise Style	European style					
Contract Months	Spot month, the next three calendar months and the next four calendar quarter months (i.e. quarter months are March, June, September and December)					
Final Settlement Day	Generally the third Wednesday of the Contract Month					
Expiry Day	Two Hong Kong Business Days prior to the Final Settlement Day					
Trading Hours	From 9:00am to 4:30pm (Trading hours on the Expiry Day are from 9:00 a.m. to 11:00 a.m.)					
Trading Fee	RMB 8 per con	tract (waived for the first 6 months)				
Exercise Fee	RMB 8 per con	tract				

Note1: To commence trading in the first quarter in 2017, subject to market readiness For further information, please refer to HKEX website

Note 2: For further information visit https://www.tma.org.hk/en\_market\_info.aspx

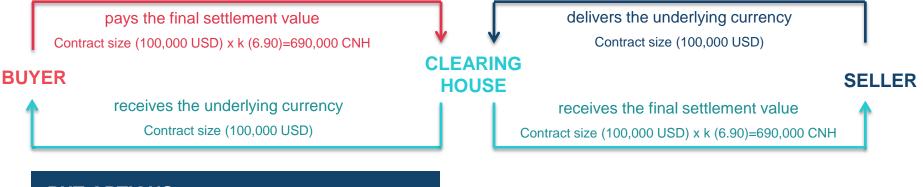
# PHYSICAL DELIVERY ON EXERCISE<sup>1</sup>

### **CALL OPTIONS**

#### **Assumptions:**

Strike price (k) = 6.90; Official Settlement  $Price^2$  (s) = 6.95

If the settlement price > strike price, the option is exercised, if the settlement price ≤ strike price, the option expires worthless

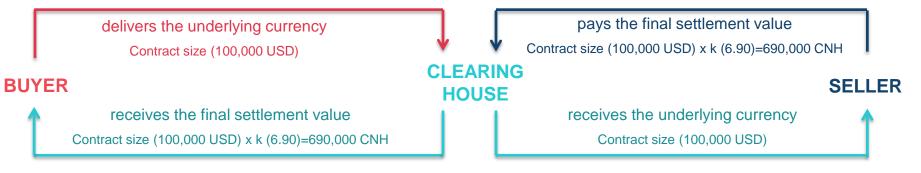


### **PUT OPTIONS**

#### **Assumptions:**

Strike price (k) = 6.90; Official Settlement Price (s) = 6.85

If the settlement price < strike price, the option is exercised, if the settlement price ≥ strike price, the option expires worthless



Note 1: Theoretical payoff diagram, transaction costs are not included

Note 2: Official Settlement Price is the USD/CNY(HK) Spot Rate published by the Hong Kong Treasury Markets Association at or around 11:30 a.m. on the Expiry Day; for further information visit https://www.tma.org.hk/en\_market\_info.aspx

# **TRADING AND CLEARING ARRANGEMENTS**

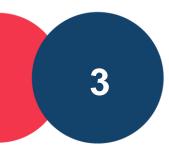
Maximum Order Size	<ul> <li>1,000 contracts</li> <li>EPs are required to submit their requests to HKEX for setting up their order size limits based on their business needs &amp; risk management requirements</li> </ul>
Block Trade	<ul> <li>Block Trade facilities supported by the HKATS<sup>1</sup></li> <li>Volume threshold: 50 contracts (notional of US\$5 million)</li> </ul>
Price Makers	<ul> <li>Some Liquidity Providers will provide continues quote on common strikes on screen</li> <li>Some Liquidity Providers will quote prices upon requests for quote (RFQ)</li> </ul>
Clearing Arrangements	<ul> <li>Clearing Participants (CPs) have to arrange for RMB and USD settlement capability</li> </ul>
	<ul> <li>Need to set up RMB and USD account with the Settlement Banks appointed by the HKCC<sup>2</sup> and to maintain relevant mandates</li> </ul>
	<ul> <li>CPs have to ensure these bank accounts are in active status and ready for physical delivery</li> </ul>
	Non-CPs should contact their General CPs to ascertain eligibility of clearing

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# **APPENDIX**



# **HIGHLIGHT IN DCASS AND CCMS FOR USD/CNH OPTIONS** (LONG CALL / LONG PUT OPTIONS)

### **DCASS – Clearing Information Window**

	***	Serie To ti	,		Settlement date Clearing date		Outstanding positions on Last Trading D	Day
Event id Accou	nt Series	Event	Class	Event qty	Delivery qty	Delivery serie	s Clearing date	Settlement date
	CUSN.NNZZ	Mark-to-market	Variation Margin	10	-XXX,XXX.XX	CNY	LTD	LTD+1
Long	CUSN.NNZZ	Exercise	Delivery vs Payment	10	XX.XXXX	CUSSP 🗲	LTD	LTD+2
Call	CUSN.NNZZ	Exercise	Other quantity	10	-X,XXX,XXX.XX	CNY	LTD	LTD+2
		Exercise	Fee 6	10	-XX.XX	CNY	LTD	LTD+1
	CUSZ.ZZAA	Mark-to-market	Variation Margin	10	XXX,XXX.XX	CNY	LTD	LTD+1
Long	CUSZ.ZZAA	Exercise	Delivery vs Payment	10	-XX.XXXX	CUSSP 🖌	LTD	LTD+2
Put	CUSZ.ZZAA	Exercise	Other quantity	10	X,XXX,XXX.XX	CNY	LTD	LTD+2
•1	CUSZ.ZZAA	Exercise	Fee 6	10	-XX.XX	CNY	LTD	LTD+1
Total Delivery qty:   Total Delivery qty:   Closing" is shown on the Last  Trading Day instead of "Exercise" for  USD/CNH Futures								

## **HIGHLIGHT IN DCASS AND CCMS FOR USD/CNH OPTIONS** (SHORT CALL / SHORT PUT OPTIONS)

### **DCASS – Clearing Information Window**

Delivery accour Delivery series: From time:			Serie To tir			Settlement date Clearing date	ال ا	Dutstanding positions on _ast Trading D	Day
Event id	Account	Series	Event	Class	Event qty	Delivery qty	Delivery serie	s Clearing date	Settlement date
		CUSN.NNZZ	Mark-to-market	Variation Margin	10	XXX,XXX.XX	CNY	LTD	LTD+1
Sho	ort	CUSN.NNZZ	Assignment	Delivery vs Payment	10	-XX.XXXX	CUSSP 🔶	LTD	LTD+2
Cal	רי	CUSN.NNZZ	Assignment	Other quantity	10	x,xxx,xxx.xx	CNY	LTD	LTD+2
	Ļ	CUSN.NNZZ	Assignment	Fee 6	10	-XX.XX	CNY	LTD	LTD+1
		CUSZ.ZZAA	Mark-to-market	Variation Margin	10	-XXX,XXX.XX	CNY	LTD	LTD+1
Sho	ort	CUSZ.ZZAA	Assignment	Delivery vs Payment	10	XX.XXXX	CUSSP 🖌	LTD	LTD+2
Put		CUSZ.ZZAA	Assignment	Other quantity	10	-X,XXX,XXX.XX	CNY	LTD	LTD+2
•	L	CUSZ.ZZAA	Assignment	Fee 6	10	-XX.XX	CNY	LTD	LTD+1
Total Delivery qty: Closing" is shown on the Last Trading Day instead of "Assignment" for USD/CNH Futures									

# **HIGHLIGHT IN DCASS AND CCMS FOR USD/CNH OPTIONS**

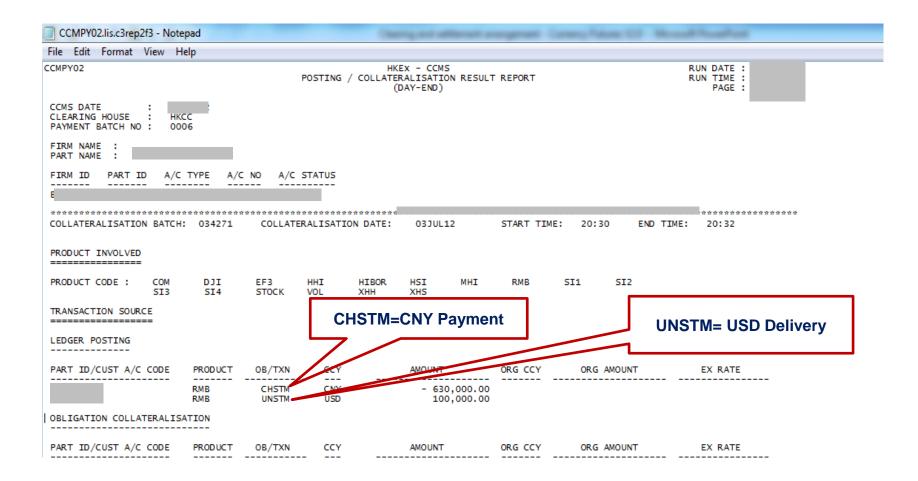
### DCASS – Report/Information for USD/CNH Options

Clearing Report/Function	Field	Description	Remarks			
	Class	Delivery vs. Payment	Refer to delivery of the underlying, i.e. USD upon final settlement			
		Other Quantity	Refer to cash payment in CNH (currency code being "CNY") upon final settlement			
<ul> <li>Deliveries</li> <li>Details (TP010)</li> </ul>	Event qty	Number of contracts involved	Outstanding positions on Last Trading Day			
<ul> <li>Clearing Information Window</li> </ul>		Number of units of underlying delivery in USD	1 unit of delivery qty = 1 * USD100,000 + => receive USD - => deliver USD			
	Delivery qty	Payment amount in CNH	Amount of payment obligation in CNH + => receive payment - => make payment			
	Dolivory sorios	CUSSP	Refer to delivery obligation upon final settlement (USD)			
	Delivery series	CNY	Currency code for CNH to be paid or received upon final settlement			



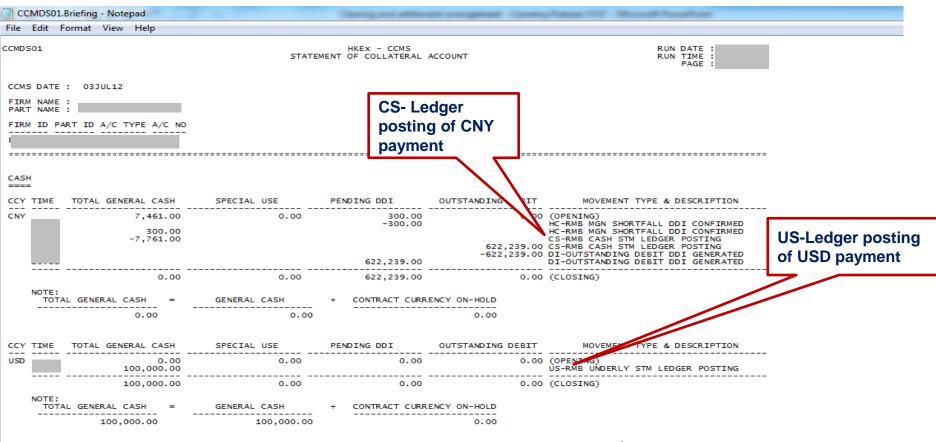
### **HIGHLIGHT IN DCASS AND CCMS FOR USD/CNH OPTIONS**

### CCMS Report – "CCMPY02" Posting/Collateralisation Result Report



### **HIGHLIGHT IN DCASS AND CCMS FOR USD/CNH OPTIONS**

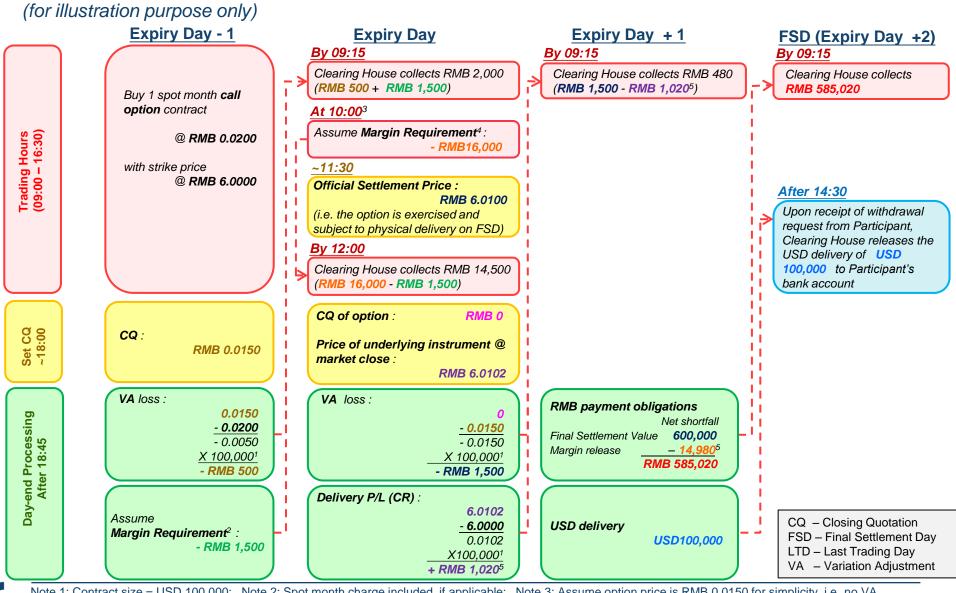
### CCMS Report - "CCMDS01" Statement of Collateral Account



REMARKS : \* THE STOCK MOVEMENTS SHOWN ARE DUE TO THE AUTOMATIC CONVERSION IN CCASS FOR A CORPORATE ACTION (FOR EXAMPLE, SHARE CONSOLIDATION OR SUBDIVISION) WHICH MAY TAKE EFFECT EITHER TODAY OR THE FOLLOWING BUSINESS DAY. FOR DETAILED CLARIFICATION, PLEASE REFER TO THE ISSUER'S ANNOUNCEMENT ON HKEX WEBSITE AT HTTP://WWW.HKEXNEWS.HK/.

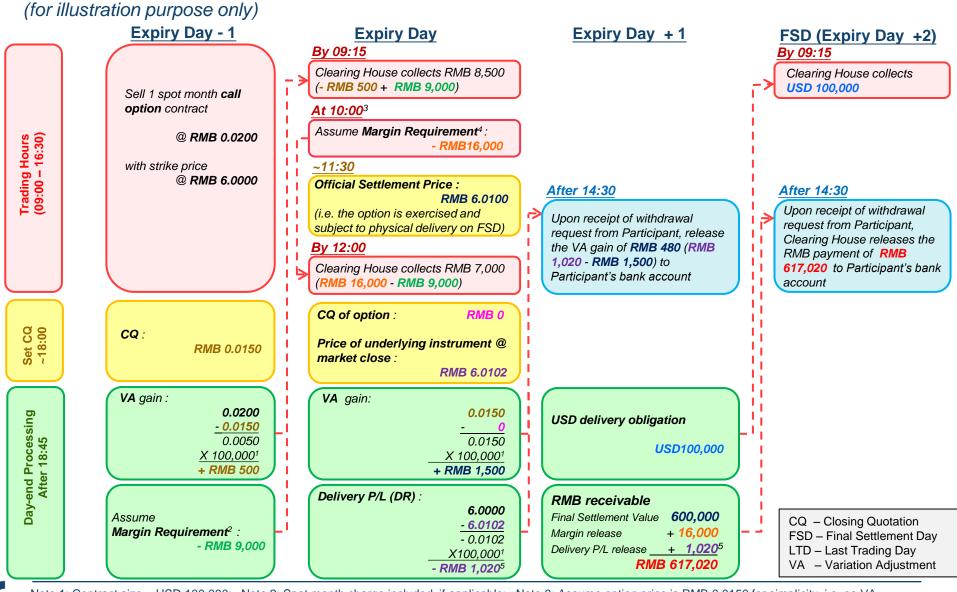


### Holder of Call Option When the Option is Exercised (i.e. Strike Price < Official Settlement Price)



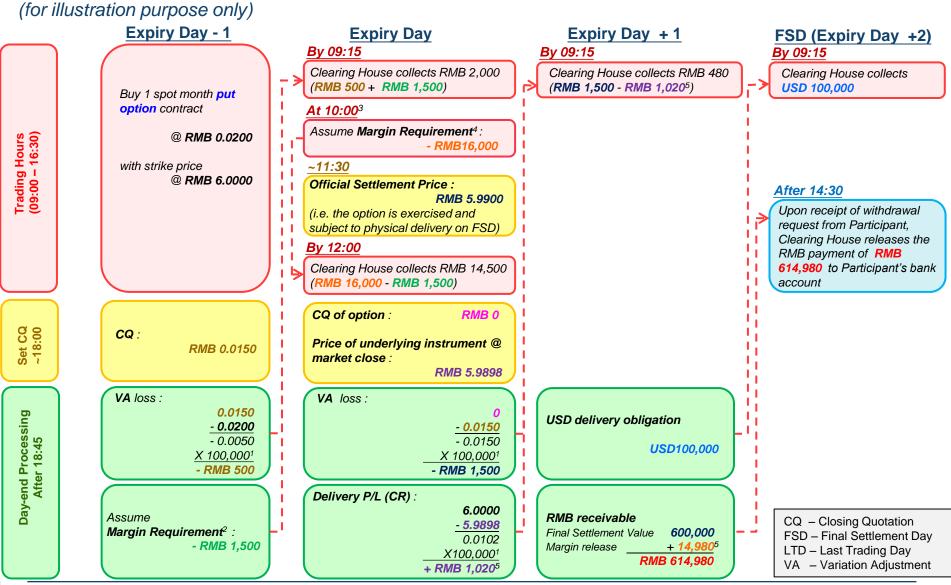
Note 1: Contract size = USD 100,000; Note 2: Spot month charge included, if applicable; Note 3: Assume option price is RMB 0.0150 for simplicity, i.e. no VA gain/loss in mandatory intra-day VA and margin call (MMC) at 10:00; Note 4: Assume the option is in-the-money. It is calculated based on the margin requirement of underlying USD/CNH futures, spot month charge included, if applicable; Note 5: Profits arising from Delivery P/L will be offset against Clearing House margin, i.e. RMB 16,000 – RMB 1,020 = RMB 14,980. Assume no change in Delivery P/L in MMC at 10:00 on Expiry Day +1 for simplicity.

### <u>Writer of Call Option</u> When the Option is Exercised (i.e. Strike Price < Official Settlement Price)



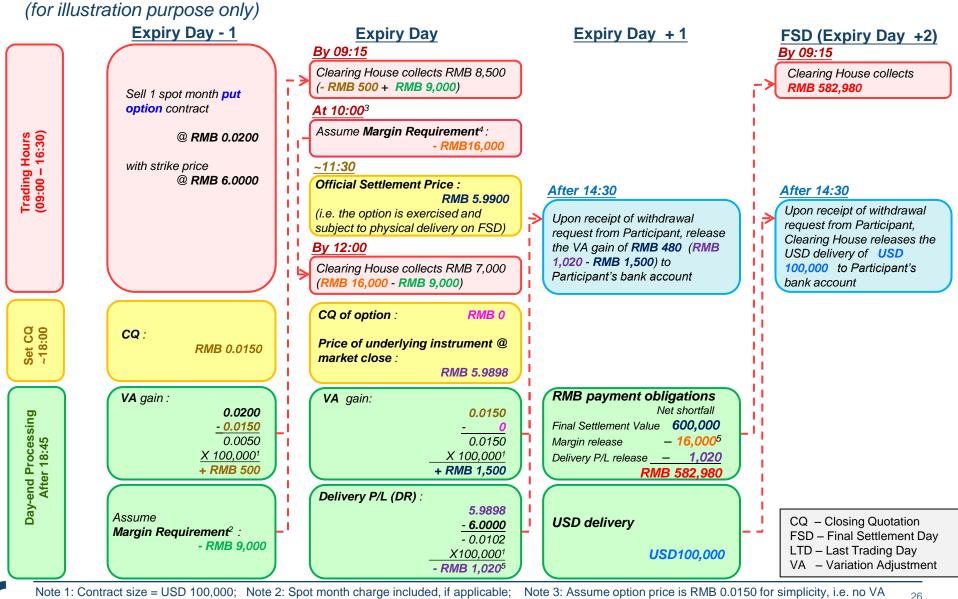
Note 1: Contract size = USD 100,000; Note 2: Spot month charge included, if applicable; Note 3: Assume option price is RMB 0.0150 for simplicity, i.e. no VA gain/loss in mandatory intra-day VA and margin call (MMC) at 10:00; Note 4: Assume the option is in-the-money. It is calculated based on the margin requirement of underlying USD/CNH futures, spot month charge included, if applicable; Note 5: Losses arising from Delivery P/L will be collected as Clearing House margin. Assume no change in Delivery P/L in MMC at 10:00 on Expiry Day +1 for simplicity.

### Holder of Put Option When the Option is Exercised (i.e. Strike Price > Official Settlement Price)



Note 1: Contract size = USD 100,000; Note 2: Spot month charge included, if applicable; Note 3: Assume option price is RMB 0.0150 for simplicity, i.e. no VA gain/loss in mandatory intra-day VA and margin call (MMC) at 10:00; Note 4: Assume the option is in-the-money. It is calculated based on the margin requirement of underlying USD/CNH futures, spot month charge included, if applicable; Note 5: Profits arising from Delivery P/L will be offset against Clearing House margin, i.e. RMB 16,000 – RMB 1,020 = RMB 14,980. Assume no change in Delivery P/L in MMC at 10:00 on Expiry Day +1 for simplicity.

### <u>Writer of Put Option</u> When the Option is Exercised (i.e. Strike Price > Official Settlement Price)



Note 1: Contract size = USD 100,000; Note 2: Spot month charge included, if applicable; Note 3: Assume option price is RMB 0.0150 for simplicity, i.e. no VA gain/loss in mandatory intra-day VA and margin call at 10:00; Note 4: Assume the option is in-the-money. It is calculated based on the margin requirement of underlying USD/CNH futures, spot month charge included, if applicable; Note 5: Losses arising from Delivery P/L will be collected as Clearing House margin. Assume no change in Delivery P/L in MMC at 10:00 on Expiry Day +1 for simplicity.