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# **Hong Kong Monetary Authority Central Moneymarkets Unit**

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**Principles for Financial Market Infrastructures**

**Disclosure for Central Moneymarkets Unit**

**January 2025**

## Principles for Financial Market Infrastructures: Disclosure for Central Moneymarkets Unit

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Contact person for further information of this disclosure	<u>CMU enquiry email address:</u> <a href="mailto:cmuenquiry@hkma.gov.hk">cmuenquiry@hkma.gov.hk</a> or the public enquiry email address: <a href="mailto:hkma@hkma.gov.hk">hkma@hkma.gov.hk</a> with attention to Head of CMU(CS).

## List of abbreviations used in this Disclosure

AI	Authorized Institution
BCP	Business Continuity Plan
BIS	Bank for International Settlements
BO	Banking Ordinance
CB	Clearing Bank
CCDC	China Central Depository & Clearing Co., Ltd.
CCP	Central Counterparty
CHATS	Clearing House Automated Transfer System
CIBM	China Interbank Bond Market
CIPS	Cross-Border Interbank Payment System
CMT	CMU Member Terminals
CMU	Central Moneymarkets Unit
CMU OmniClear	CMU OmniClear Limited
CMUP	Central Moneymarkets Unit Processor
CPMI	Committee on Payments and Market Infrastructures
CPSS	Committee on Payment and Settlement Systems (name changed to CPMI from 1 September 2014)
CSD	Central Securities Depository
CSSO	Clearing and Settlement Systems Ordinance (retitled as PSSVFO from 13 November 2015)
DvP	Delivery versus Payment
EFBN	Exchange Fund Bills and Notes
EFO	Exchange Fund Ordinance
FMI	Financial Market Infrastructures
FMIO	Financial Market Infrastructures Oversight
FTS	File Transfer Service
HKD	Hong Kong Dollar
HKCC	HKFE Clearing Corporation Limited
HKICL	Hong Kong Interbank Clearing Limited
HKMA	Hong Kong Monetary Authority
HKSCC	Hong Kong Securities Clearing Company Limited
HSBC	The Hongkong and Shanghai Banking Corporation Limited
ICSD	International Central Securities Depository
KSD	Korea Securities Depository
LC	Licensed Corporation
MPF	Mandatory Provident Fund
OTC Clear	OTC Clearing Hong Kong Limited
PBOC	People's Bank of China
PFMI	Principles for Financial Market Infrastructures
PSSVFO	Payment Systems and Stored Value Facilities Ordinance
PvP	Payment versus Payment
RD	Recognized Dealer
RMB	Renminbi
RTGS	Real Time Gross Settlement
SEOCH	SEHK Options Clearing House Limited
SFC	Securities and Futures Commission
SHCH	Shanghai Clearing House
SI	Settlement Institution
SSS	Securities Settlement System
TA	Transfer Agent

TDCC  
USD

Taiwan Depository & Clearing Corporation  
US Dollar

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## **I. Executive Summary**

The Central Moneymarkets Unit (CMU), established in 1990, is owned by the Hong Kong Monetary Authority (HKMA) and operated by the HKMA to provide clearing, settlement and custodian service for debt securities issued by both public and private sector entities denominated in Hong Kong dollar and other major currencies. Over the years, the CMU has also developed external links with regional and international debt securities settlement systems to assume a more global reach, allowing overseas investors to hold and settle debt securities lodged with the CMU, and local investors to hold and settle debt securities lodged with overseas systems.

The HKMA plays a key role in developing a safe and efficient financial infrastructure in Hong Kong, which is essential to maintaining the stability and integrity of the monetary and financial system. The CMU has been operating smoothly since its launch.

As a central securities depository (CSD) and a securities settlement system (SSS) in Hong Kong, the CMU is subject to the laws of Hong Kong. As a designated clearing and settlement system under the Payment Systems and Stored Value Facilities Ordinance (PSSVFO), the CMU is also under the statutory oversight of the HKMA (via the Financial Market Infrastructure Oversight team (FMIO team)); and all transactions effected through the CMU enjoy statutory backing for settlement finality.

The CMU provides services to participants who comprise financial institutions subject to the supervision of a financial regulator in Hong Kong or overseas/domestic financial institutions joining the CMU under the discretionary approval of the HKMA.

Like other CSD/SSS, CMU could be exposed to common major types of risk including operational risk, system risk, credit risk (arising from linkages with other regional/international CSDs) and legal risk. Unlike a central counterparty (CCP), the CMU does not guarantee settlement and hence is not exposed to any liquidity or credit risk of its participants.

The CMU has put in place a sound risk assessment and management framework, which enables CMU to identify, measure, monitor, manage and control the risks of operating the CMU comprehensively and prudently. The system features and risk management arrangements, as well as the turnover statistics are publicly disclosed. A robust operational risk management framework, supported by appropriate system designs and features, IT policies, procedures and controls, is in place. On-site resilience, a hot back up site, together with a comprehensive disaster recovery plan which is regularly reviewed and rehearsed, help ensure the critical operations of the CMU can be resumed in a timely manner under various contingency situations. This is further supplemented by internal and external audit exercises which are conducted periodically to ensure that effective risk control measures are in place.

## **II. Summary of major changes since the last update of the disclosure**

Major changes since the last update of the disclosure made in July 2023 include:

- Highlighting the establishment of CMU OmniClear Limited, a wholly owned subsidiary of the Exchange Fund, to assist the HKMA in the operation of the CMU since January 2025;
- Updating all CMU related statistics, charts 1 and 2, to include figures up to November 2024;
- Updating the division name from Payment Systems Operation Department to Financial Market Infrastructure Service Division;
- Updating the diagram of Hong Kong's multi-currency financial infrastructure
- Updating to reflect the implementation of CMU New Platform which offers CMT+ and CMU Open API channels
- Updating the CMT connectivity option by adding ICLNet, in addition to the original SWIFTNet and Internet options.

## **III. General background on the CMU**

### ***General description of the CMU and the market it serves***

The CMU is the debt securities clearing and settlement system in Hong Kong owned and operated by the HKMA. The CMU provides an efficient clearing, settlement and custodian service for debt securities denominated in Hong Kong dollars and other major currencies.

Over the years, the CMU has developed external links with regional and international debt securities settlement systems to assume a more global reach. These links allow overseas investors to hold and settle debt securities lodged with the CMU, and local investors to hold and settle debt securities lodged with overseas systems. The CMU has developed links with debt securities settlement systems in Australia, South Korea, Mainland China, Taiwan and international debt securities settlement systems such as Euroclear and Clearstream.

With the launch of Northbound trading of the Bond Connect scheme in July 2017, overseas investors from Hong Kong and other countries and areas are able to invest in the China Interbank Bond Market (CIBM). The HKMA has opened accounts with China Central Depository & Clearing Co., Ltd (CCDC) and Shanghai Clearing House (SHCH). By virtue of its accounts with the two Mainland CSDs, CMU can settle Bond Connect transactions and hold CIBM debt securities on behalf of CMU Members, which in turn are providing services directly or indirectly to overseas investors using Bond Connect linkage service in the CMU.

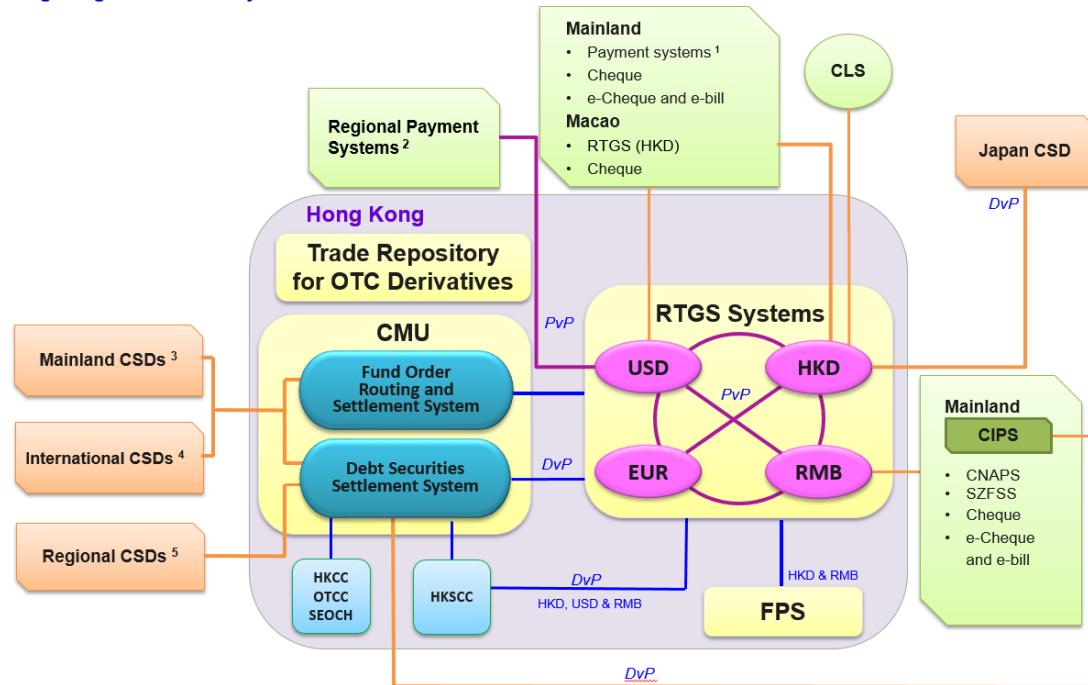
For the Southbound Bond Connect scheme launched in September 2021, Mainland CSDs have opened securities accounts with the CMU to enable Mainland investors to

invest in Hong Kong bond market. This CSD-to-CSD settlement link allows Mainland investors to hold and settle debt securities lodged with the CMU through the Mainland CSDs. The CMU has also joined the Cross-Border Interbank Payment System (CIPS) in the Mainland as direct participant to facilitate money settlement arising from Bond Connect transactions.

The diagram below is an overview of the financial infrastructure in Hong Kong. Major components include:

- Payment systems for the settlement of interbank payments : Hong Kong dollar, US dollar, euro and renminbi RTGS systems
- Debt securities settlement system for settlement and custody of debt securities : CMU
- Systems links, particularly external links to facilitate cross-border transactions

**Hong Kong's multi-currency financial infrastructure**



Note 1: CDFCPS, RTGS links with Shenzhen and Guangdong

Note 2: PvP links with Malaysia, Thailand and Indonesia

Note 3: Cross-boundary links with CCDC and SHCH (Bond Connect) and CSDC (Mutual Recognition of Funds)

Note 4: Cross-border links with Clearstream and Euroclear

Note 5: Cross-border links with Austraclear (Australia), KSD (South Korea) and TDCC (Taiwan)

CCDC – China Central Depository & Clearing Co., Ltd. (settlement system for fixed income securities in Mainland)  
 CSDC – China Securities Depository and Clearing Corporation Limited

DvP – Delivery-versus-Payment  
 PvP – Payment-versus-Payment

CIPS – Cross-Border Interbank Payment System

CLS – Continuous Linked Settlement (global multicurrency cash settlement system)

CMU – Central Moneymarkets Unit (settlement system for debt securities)

CNAPS – China National Advanced Payment System (RMB RTGS system in Mainland)

FPS – Faster Payment System

HKCC – HKFE Clearing Corp Ltd (central counterparty providing clearing and settlement for futures)

HKSCC – HK Securities Clearing Co Ltd (central counterparty providing clearing and settlement for securities)

Japan CSD (BOJ-NET) – Bank of Japan Financial Network System for Japanese Government Bond Services

KSD – Korean Securities Depository (Korea's central securities depository)

OTCC – OTC Clearing Hong Kong Limited (central counterparty providing clearing and settlement for OTC derivatives)

SEOCH – SEHK Options Clearing House Ltd (central counterparty providing clearing and settlement for options)

SHCH – Shanghai Clearing House (settlement system for fixed income securities in Mainland)

SZFSS – Shenzhen Financial Settlement System

TDCC – Taiwan Depository and Clearing Corporation (Taiwan's securities settlement system)

The CMU provides a safe and efficient clearing system and central depository service for CMU eligible instruments which are either immobilised or dematerialised. Transfer of title is effected electronically through computer book entry across the book of the HKMA. Available communication channels include CMU Member Terminals (CMT, CMT+)<sup>1</sup>, SWIFT (support ISO15022 and 20022), File Transfer Service (FTS), FileAct via the SWIFT network and the CMU Open API.

The CMU accepts the following types of securities for clearing, settlement and custody:

- Exchange Fund Bills and Notes (EFBN) issued by the Exchange Fund of the HKSAR Government
- Government bonds issued by the HKSAR Government
- Debt Instruments issued by public and private sector entities
- Debt securities lodged with Austraclear in Australia, Korea Securities Depository in South Korea, China Central Depository and Clearing Co., Ltd and Shanghai Clearing House in Mainland China.
- International securities lodged with Euroclear and Clearstream

The CMU has a seamless interface with the Hong Kong dollar, US dollar, euro and renminbi RTGS systems (i.e. HKD CHATS, USD CHATS, Euro CHATS and RMB CHATS) in Hong Kong to facilitate delivery-vs-payment (DvP) settlement for debt securities lodged with the CMU as well as collateral management services. As for transactions involving Bond Connect, the cash legs are settled in the Mainland's CIPS. All securities are settled in real-time (BIS Model 1) mode.

In addition to providing clearing and settlement for debt securities, the CMU also offers the following services to its members:

- Market making arrangements for EFBN
- Automatic repo facility (intraday and/or overnight)
- Collateral management service including bank-to-bank repo facility, securities lending programme and triparty repo services partnered with other repo platform providers
- Tendering, allotment and issuance programme for EFBN, and Government Bonds
- CMU Bid (tendering and allotment) for private or public sector debt securities
- Interest and redemption payments

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<sup>1</sup> CMT refers to a front-end browser software which enables CMU participants to connect to the CMU system either through SWIFTNet, internet or ICLNet. CMT+ refers to a browser-based front-end user terminal which enables CMU participants to connect to the CMU New Platform through SWIFTNet, Internet or ICLNet.

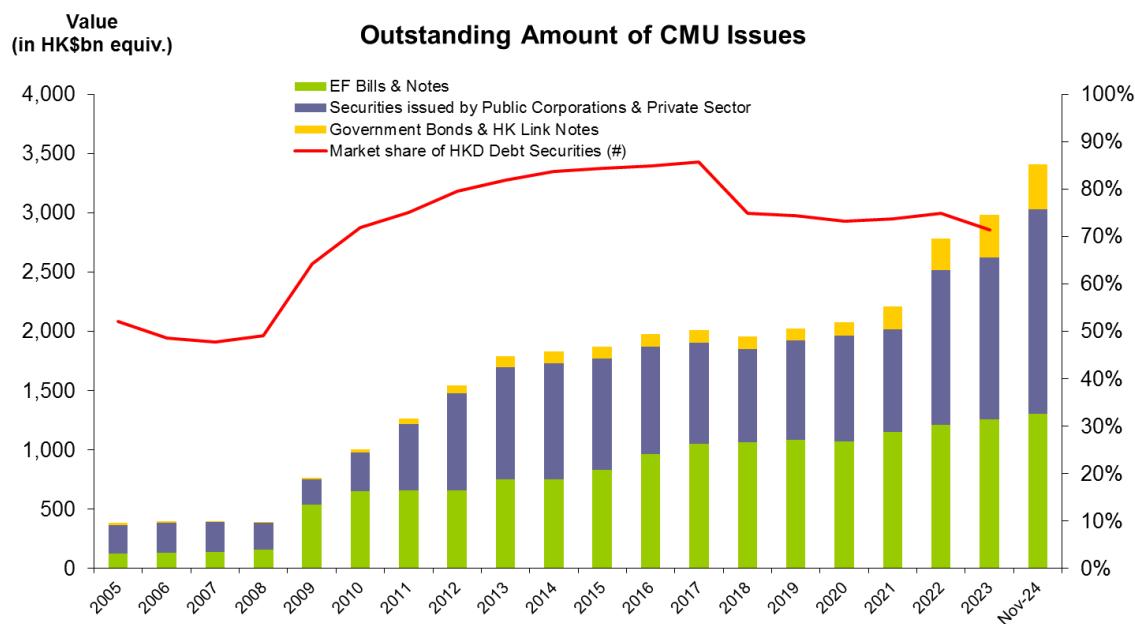
- Corporate action service
- Investment fund order routing and settlement service
- CMU MPF money settlement service (the transfer of payment instructions to relevant CHATS systems for money settlement arising from employee's choice arrangement, which involves money transfer between trustees)

At the end of Nov 2024, there were 209 CMU participants. Outstanding EFBN and Government Bonds amounted to HK\$1,583.4 billion and outstanding private sector debt securities amounted to HK\$1,723.8 billion equivalent (refer to Chart 1 below).

The CMU has been operating safely and smoothly since its launch in 1996. The trends of its turnover value and volume from 2005 are shown in Chart 2 below.

#### Chart 1 Outstanding amount of the CMU issues

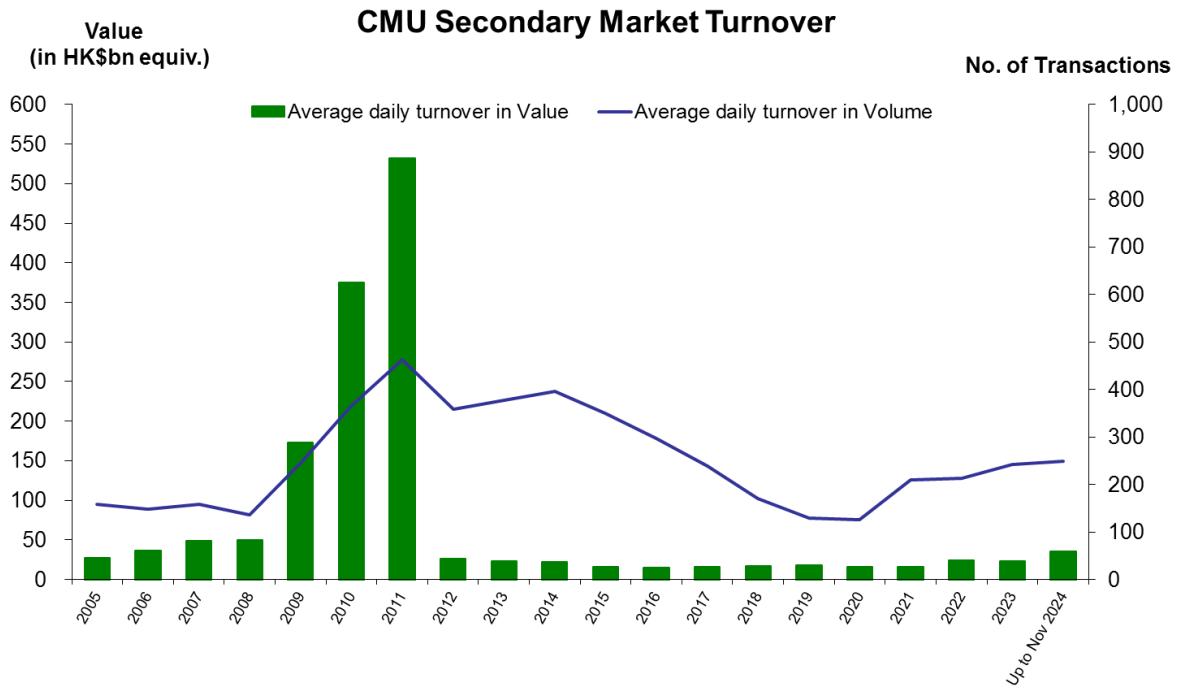
Chart 1 shows (a) the outstanding amount of debt securities lodged with the CMU since 2005, broken down by major types; and (b) CMU's percentage market share in HKD debt securities lodged with the CMU.



# Since 2018, more short-term debt securities statistics are included in the total HKD debt securities in calculating the market share.

#### Chart 2 CMU secondary market turnover

Chart 2 shows the average daily turnover (in value and volume) in the secondary market of debt securities lodged with the CMU.



More historical data on the above statistics are available in the monthly statistical bulletin available on the HKMA website:

<http://www.hkma.gov.hk/eng/market-data-and-statistics/monthly-statistical-bulletin/table.shtml#section4>

### *General organization of the CMU*

The CMU has governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, as well as other relevant public interest considerations and the objectives of relevant stakeholders. The HKMA is the owner and system operator of the CMU. Starting from January 2025, CMU OmniClear Limited (CMU OmniClear), a wholly owned subsidiary of the Exchange Fund, is responsible for assisting the HKMA in the operation and business development of the CMU. Separately, the HKMA has appointed Hong Kong Interbank Clearing Limited (HKICL) to develop and oversee the day-to-day operation of the computer system of the CMU. The HKMA, CMU OmniClear and the HKICL have established policies and procedures for the safe and efficient operation of the CMU, which is subject to the oversight of the HKMA (via the FMIO team). There are effective “Chinese wall” arrangements to avoid any potential conflicts of interest.

CMU OmniClear has its own governance structure, and decision-making, audit, and control processes. CMU OmniClear assists the HKMA in the day-to-day operation of the CMU, liaison with participants as appropriate and initiating on-going development

and enhancements, while decisions on policy and strategic development regarding CMU's activities and services are made by the HKMA. CMU participants are consulted and briefed with sufficient advance notice on important initiatives and events affecting the CMU, which may be driven by the HKMA, CMU OmniClear, the local banking industry, or latest developments in international practice and regulation. Further details of the governance structure of the HKMA are available at the HKMA website. Further details about CMU OmniClear are available at the CMU OmniClear website. Also see the Annex for the organisation chart of the HKMA and relationship with CMU OmniClear.

### ***Legal and regulatory framework***

The CMU was established in 1990 to provide clearing, settlement and custodian services for debt securities in Hong Kong, and the HKMA serves as the system operator of the CMU. Business activities of the CMU are conducted in Hong Kong and thus subject to the laws of Hong Kong.

The CMU was deemed designated under the then CSSO on 4 November 2004 and granted a certificate of finality on the same day. The CSSO, retitled as the Payment Systems and Stored Value Facilities Ordinance<sup>2</sup> (PSSVFO) starting 13 November 2015, empowers the HKMA to designate and oversee clearing and settlement systems that are material to the monetary or financial stability of Hong Kong or to the functioning of Hong Kong as an international financial centre. The PSSVFO also provides statutory backing for the settlement finality of transactions effected through such designated systems by protecting the settlement finality from insolvency laws or any other laws. This ensures that transactions settled through the designated systems are final and irrevocable and will not be reversed in any circumstances, including the insolvency of the system participant, whereas any rights resulting from the underlying transaction of any such transaction will be preserved.

Financial institutions are required to enter into the CMU Membership Agreement with the HKMA in order to join the CMU and utilise CMU services. For certain specific CMU services, CMU participants are further required to sign relevant terms and conditions with the HKMA.

### ***System design and operations***

Generally, the CMU system opens from 8:30 a.m. to 5:15 a.m. (Hong Kong time) of the next calendar day every Monday to Friday, including general holidays in Hong Kong except 1<sup>st</sup> January of each year. During Hong Kong general holidays on which the CMU is open, USD/Euro/RMB intraday and overnight repo services are provided. Securities transfers and fund transfers are processed in the CMU and the respective domestic RTGS systems. The CMU system can also operate for limited services, such

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<sup>2</sup> The CSSO is retitled as the PSSVFO to introduce a new regulatory regime for stored value facilities and retail payment systems

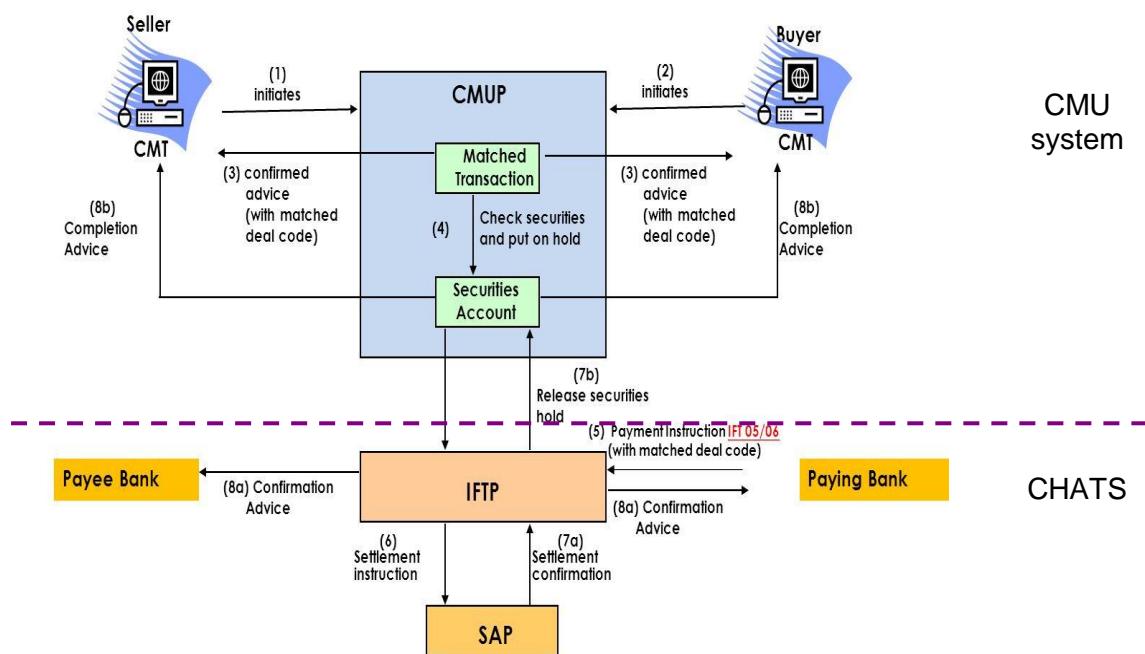
as Bond Connect linkage service, at the weekends falling on the Mainland business days.

The CMU does not maintain cash accounts for CMU participants. As the CMU system has a seamless interface with the HKD, USD, Euro and RMB CHATS, fund transfers relating to securities transactions can be effected through the banks' settlement accounts of the respective currency maintained with Settlement Institutions (SIs) or Clearing Bank (CB). As for Southbound Bond Connect transactions involving settlement with Mainland investors, the CMU can initiate payment messages to CIPS for money settlement to effect through the banks' settlement accounts in the Mainland's CIPS.

The CMU provides real-time settlement in both single leg securities transfer and DvP transactions. The real-time DvP arrangement for CMU transactions is an example of the Model 1 approach identified by the BIS i.e. the transfer of both securities and fund is conducted on a trade by trade (gross) basis. The final (unconditional) transfer of CMU securities from the seller to the buyer (delivery) follows immediately the transfer of funds from the buyer to the seller (payment). A number of CMU optimiser runs are scheduled during a business day to improve liquidity and settlement efficiency for real-time CMU transactions.

The following diagram shows the settlement mechanism of a typical DvP settlement in CMU with payments settled in CHATS:

## CMU DvP Settlement



For securities transactions to be settled in CMU, participants of CMU must input transaction details into the CMU system on or before the settlement day. Transfer instructions sent to the CMU will be matched on real-time basis.

After CMU participants confirm the trade details and input the transactions into the CMU system, the transactions will be matched within the CMU before settlement. Matching is required for all transactions except house transfers which involve securities transfers among members' main account and custody accounts (sub-accounts). If no match is found, the record will be added to the list of unmatched instructions. The above process will be performed sequentially for each new unmatched instruction.

Securities transfers (excluding Southbound Bond Connect transactions) are processed in the CMU as follows:

Through the seamless interface between the CMU and the HKD, USD, Euro and RMB CHATS, securities transactions can be settled on a real-time basis. For real-time DvP transactions, both the seller and the buyer input instructions through CMT, SWIFT or Open API. Once the instruction is matched, it is stored in the system. The system will then look for the specific securities in the seller's account and put the securities on hold, after which an interbank payment message will be generated. After the payment initiated by the buyer is settled across the books of the SIs/CB, a confirmation message will be returned to the CMUP and the securities held will be released to the buyer. If the seller does not have sufficient securities, the system will retry at 15-minute intervals until the cut-off time. Likewise, if the buyer does not have sufficient funds in its cash accounts, the transactions are held pending settlement until sufficient funds are available. When there are sufficient funds and securities in the accounts of the buyer and seller, settlement takes place immediately and simultaneously. Besides, a number of CMU optimiser runs are scheduled during a business day to improve liquidity and settlement efficiency for all real-time CMU transactions. The schedule is subject to change by the MA in accordance with existing procedures and the daily situation.

During each CMU optimiser run, securities and cash of the selected transactions are settled simultaneously on a multilateral offsetting basis, therefore raising the proportion of securities transfer with real-time settlement. The system calculates the net settlement amount of both securities and cash for each CMU participant, and then checks whether sufficient funds and securities are available for each participant. If so, final transfers of both securities and cash for all members are effected simultaneously. Otherwise, all or some of the transfer instructions of members with insufficient funds or securities are eliminated from the run. In any case, no partial settlement of a securities transaction can be made.

All same-day value unmatched instructions and unsettled transactions will be carried

forward to the next value date by the system for further settlement. Unsettled transactions can be re-processed by the system for a maximum of 10 calendar days.

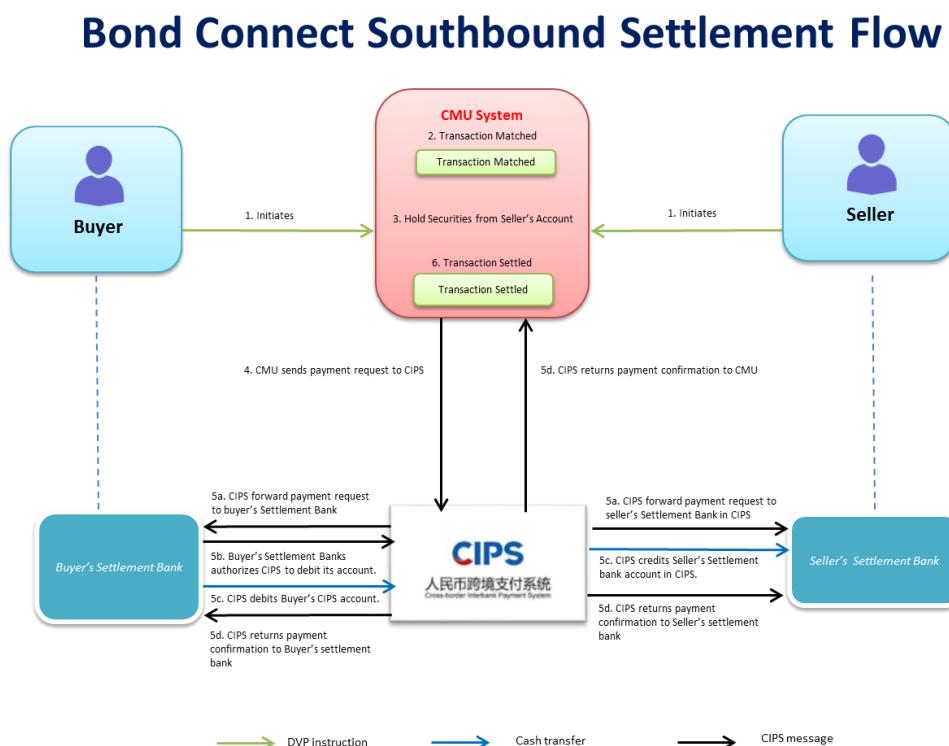
Securities transfers are made by debits and credits to members' securities accounts in CMU in real-time.

Real-time transactions : 8:30 a.m. - 6:30 p.m.

For bank participants, fund transfers in conjunction with CMU are made as debits and credits to members' settlement accounts maintained with SIs/CB. Non-bank participants have to engage banks as their correspondent banks for money settlement across the books of SIs/CB.

Securities transfers and cash transfers are both irrevocable and final when settlement takes place across the books of the HKMA. Securities transfers are final when the transactions are posted to members' securities accounts. This can be done in real-time. Fund transfers become final when the settlement is done across the books of SI/CB. Due to the DvP device in CMU, securities and fund transfers become final when posting of securities and cash are effected in real-time.

The following diagram shows the settlement mechanism of a Southbound Bond Connect DvP transaction with money payments settled in CIPS:



For a real-time DvP transaction, both the seller and the buyer input instructions through the CMT, SWIFT or Open API. Once the instruction is matched, on the settlement date

the system will look for the specific securities in the seller's account and put the securities on hold if available, after which a payment message will be initiated and sent to CIPS by the CMU. CIPS will then forward the payment message to buyer's correspondent settlement bank and the settlement bank will authorize CIPS to debit its account by returning an authorization message to CIPS. After the payment is successfully debited from the buyer's and credited to the seller's correspondent banks' settlement accounts in CIPS, a confirmation message will be returned to the CMUP and the securities held will be released to the buyer. If the seller does not have sufficient securities, the CMU system will retry the process at 15-minute intervals until the cut-off time. Likewise, if the buyer does not have sufficient funds in its cash accounts in CIPS, the transactions are held pending settlement until sufficient funds are available. When there are sufficient funds and securities in the accounts of the buyer and seller, settlement takes place in real-time and gross basis.

In any case, no partial settlement of a securities transaction can be made.

Securities transfers are made by debits and credits to members' securities accounts in CMU in real-time.

Real-time transactions : 9:00 a.m. - 5:00 p.m.

Securities transfers are final and irrevocable when the transactions are settled and posted to members' securities accounts in the CMU system. Fund transfers become final when the settlement is done across the book of CIPS.

The CMU's corporate action service provides a communication platform which facilitates the processing of the following operations in an automatic manner:

- (a) A paying agent of CMU Instruments announces information about corporate actions to CMU participants which hold the relevant CMU Instruments;
- (b) A CMU participant which holds the eligible CMU Instruments under a corporate action sends authenticated custody instructions to the respective agents; and
- (c) The CMU distributes the proceeds of custody operations accepted in the CMU system to CMU participants on behalf of the respective paying agents. The custody distributions accepted in the CMU system include securities and cash distributions which can be settled through the RTGS systems in Hong Kong.

Besides providing clearing settlement and custody services for debt securities, the CMU provides investment fund order routing and settlement service to facilitate its members to process investment fund transactions. Riding on international investment fund service platforms including those provided by Euroclear and Clearstream, the service is essentially a standardised platform for the processing of investment funds orders routing between local and overseas investment houses, distributors, custodians, and Transfer Agents (TAs) and the settlement of Investment Fund Shares.

Following the launch of Mainland-Hong Kong Mutual Recognition of Funds (MRF) in H2-2015, which allows Mainland and Hong Kong recognised funds to be distributed in each other's market, the CMU has linked up with TAs and fund houses in the Mainland including the China Securities Depository and Clearing Corporation Ltd (ChinaClear) to facilitate cross-border investment fund order routing services.

## IV. Principle-by-principle summary narrative disclosure

<b>Principle 1: Legal basis</b>	An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.
<b>Summary Disclosure</b>	<p>The CMU has a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in its relevant jurisdiction which is Hong Kong:</p> <ul style="list-style-type: none"> <li>1.1 access by users to CMU service is supported by proper legal documentation and transparent rules and procedures. All CMU participants are required to observe the rules promulgated in the CMU Membership Agreement and the CMU reference manual. The CMU Membership Agreement is governed by the laws of Hong Kong</li> <li>1.2 PSSVFO ensures settlement finality of debt securities transactions made on the CMU system</li> <li>1.3 the laws of Hong Kong recognise dematerialisation and book entry transfer as well as netting arrangements, all of which are key features of the CMU system</li> <li>1.4 the appointment of CMU OmniClear to assist the HKMA in operating the CMU is supported by proper legal documentation, including a Services Agreement between the HKMA and CMU OmniClear which is governed by the laws of Hong Kong.</li> <li>1.5 the appointment of the HKICL as the computer operator to perform the day-to-day computer operation is supported by proper legal documentation, including a Services Agreement and various addendums to the Services Agreement, between the HKMA and HKICL and governed by laws in Hong Kong</li> <li>1.6 the CMU conducts its business activities in Hong Kong and is therefore subject to the laws of Hong Kong. For CMU services provided in collaboration with other service providers in overseas jurisdictions which require the CMU to enter into agreements with overseas entities, legal advice is sought in the process of preparing the necessary documents to determine the appropriate choice of law and to prevent potential conflict-of-laws issues. In general, business activities taking place domestically will be subject to the laws of Hong Kong, while activities happening overseas will be subject to the laws of other jurisdictions</li> </ul>

<b>Principle 2: Governance</b>	An FMI should have governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders.
<b>Summary Disclosure</b>	<p>The CMU has governance arrangements that are clear and transparent, promote the safety and efficiency of the FMI, and support the stability of the broader financial system, other relevant public interest considerations, and the objectives of relevant stakeholders:</p> <p>2.1 the HKMA is the owner and system operator of the CMU, and CMU OmniClear is established to assist the HKMA in such operation of the CMU, with clear lines of responsibility and accountability</p> <p>2.2 the CMU is subject to the oversight of the FMIO team under the Banking Conduct Department of the HKMA (pursuant to the provisions of the PSSVFO) as well as to internal audit and risk management processes (see the Annex for the organisation chart of the HKMA showing CMU and FMIO team and relationship with CMU OmniClear)</p> <p>2.3 as the system operator of the CMU, the HKMA has a clear, publicly-communicated governance structure. The relevant information on the organization and governance structure of the HKMA are available in the HKMA's Annual Report or website</p> <p>2.4 the HKMA has clear, publicly-communicated policy objectives of promoting the stability and integrity of the financial system, and maintaining and developing Hong Kong as an international financial centre</p>

	2.5 CMU OmniClear, which assists the HKMA in the operation of the CMU, has a robust governance structure. The senior management of CMU OmniClear is accountable to its board of directors, which is chaired by the Chief Executive of the HKMA.
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<b>Principle 3: Framework for the comprehensive management of risks</b>	<p>An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks</p>
<b>Summary Disclosure</b>	<p>The CMU has a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational and other risks:</p> <ul style="list-style-type: none"> <li>3.1 CMU OmniClear, which assists the HKMA in the operation of the CMU, is subject to a stringent risk management framework. The framework requires regular assessments of all facets of risk, and implementation of effective measures to pre-empt and address the applicable risks</li> <li>3.2 risk consideration and analysis are also performed when devising new initiatives and/or FMI linkages. The effectiveness of the risk control measures is also assessed regularly and when needed. CMU's operations are subject to regular internal/external audits</li> <li>3.3 a comprehensive set of contingency measures/ facilities is in place to deal with different contingency scenarios. Contingency drills are conducted annually or when necessary to mitigate business continuity risk. The BCP is reviewed and updated on a regular basis</li> <li>3.4 HKICL as the computer operator of the CMU system may be subject to risks such as operational risk and information technology related risk. The HKICL Board and the Board Sub-Committee oversee the implementation of a sound and comprehensive risk management framework in HKICL with focus on information technology, operational resilience and business continuity. There are also stringent requirements on information technology and operational risk management, including regular performance of external audits, contingency drills and rehearsals of disaster recovery arrangements to ensure business continuity in disaster scenarios</li> <li>3.5 HKICL has also obtained certification under two ISO systems and established associated risk management framework: ISO27001 for Information Security Management and ISO9001 for Quality Management System. Under these frameworks, HKICL adopted organised methodologies to identify, measure, monitor and manage effectively all facets of risks that arise in or are borne by HKICL</li> </ul>

<b>Principle 4: Credit Risk</b>	<p>An FMI should effectively measure, monitor, and manage its credit exposure to participants and those arising from its payment, clearing, and settlement processes. An FMI should maintain sufficient financial resources to cover its credit exposure to each participant fully with a high degree of confidence.</p>
<b>Summary Disclosure</b>	<p>The CMU has an effective credit risk management process to identify, monitor and control potential credit risk exposures:</p> <ul style="list-style-type: none"> <li>4.1 CMU only provides debt securities clearing, settlement and custodian services to its participants. CMU is not a counterparty to any securities transactions nor does the CMU offer credit to its participants or guarantee any settlement, hence the CMU will not incur credit exposure to its participants</li> <li>4.2 CMU has designed various tools to control identified sources of credit risk that a participant may expose, such as DvP settlement mechanism, provision of intraday and/or overnight repo facilities to facilitate participants' liquidity management, no offering of overdraft facility to participants, and direct debit limit to limit the exposure of a non-bank participant to its correspondent bank</li> <li>4.3 CMU may be subject to credit risk of overseas CSDs/ICSDs as a result of the accounts CMU opens with them for the purpose of holding funds/securities on behalf of CMU participants. Measures to manage such risks are described under our response to Principle 20 (FMI links)</li> </ul>

<b>Principle 5: Collateral</b>	An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks. An FMI should also set and enforce appropriately conservative haircuts and concentration limits.
<b>Summary Disclosure</b>	<p>5.1 CMU only provides debt securities clearing, settlement and custodian services to its participants. CMU is not a counterparty to any securities transactions nor does the CMU offer credit to its participants or guarantee any settlement, hence the CMU will not incur credit exposure to its participants. CMU therefore does not require any collateral from participants</p> <p>5.2 the CMU provides the platform for conducting repo transactions (intraday or overnight) to provide short term liquidity to participants of Hong Kong's RTGS systems</p> <p>5.3 the SIs/CB of the RTGS systems in Hong Kong are responsible for determining the eligibility of individual securities as collaterals and the applicable haircut level. The applicable acceptance criteria are input into the CMU system by the SIs/CB, and the system automatically performs its tasks using specified pricing sources and methodology accordingly</p> <p>5.4 key collateral management features of the CMU system:</p> <ul style="list-style-type: none"> <li>• Automatic and manual collateral selection;</li> <li>• Daily mark-to-market of collaterals to ensure bank to bank repo transactions are sufficiently collateralized;</li> <li>• Market prices are updated at least once a day;</li> <li>• Haircut percentages can be defined for different maturity bands of collaterals;</li> <li>• Cross-currency haircut will be applied if the nominal currency of any collateral is different from the settlement currency of the repo transaction;</li> <li>• Mark-to-market threshold range is the tolerance level acceptable to both the buyer and seller. As long as the values of the collaterals in respect of a bank-to-bank repo transaction falls within this threshold range, no top-up or return of securities is required;</li> <li>• Substitution, top-up and return of collaterals</li> </ul> <p>5.5 through CMU's real-time interface with ICSDs, cross-border collaterals can be brought into the CMU system in good time for collateral management purposes as required. Real-time information enables participants to use the collaterals efficiently. Measures are also in place to mitigate potential risks (legal, market, operational, etc.) associated with the acceptance of cross-border collateral</p>

<b>Principle 6: Margin</b>	A CCP should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.
<b>Summary Disclosure</b>	Not applicable to the CMU as this principle is not applied to CSD and SSS according to the PFMI.

<b>Principle 7: Liquidity Risk</b>	<p>An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies to effect same-day and, where appropriate, intraday and multiday settlement of payment obligations with a high degree of confidence under a wide range of potential stress scenarios that should include, but not be limited to, the default of the participant and its affiliates that would generate the largest aggregate liquidity obligation for the FMI in extreme but plausible market conditions.</p>
<b>Summary Disclosure</b>	<p>CMU only provides securities clearing, settlement and depository services as a SSS but not as a CCP. It does not guarantee settlement of securities transactions, hence CMU does not face any liquidity risk:</p> <ul style="list-style-type: none"> <li>7.1 in the context of CMU, liquidity risk is more related to the risk that a CMU participant may not be able to settle securities transactions due to temporary shortage of funds or insufficient securities to deliver</li> <li>7.2 as a SSS, the CMU system is designed to help address the liquidity risk that a CMU participant may encounter during the settlement process</li> <li>7.3 the CMU has a seamless interface with the RTGS systems in Hong Kong to facilitate fund transfers relating to securities transactions by its participants. All CMU participants are required have a cash settlement account with the SIs/CB directly or indirectly. CMU provides a highly automated collateral management system to support intraday and overnight repo transactions entered between banks and the SIs/CB, through which banks can obtain intraday liquidity using eligible securities</li> <li>7.4 liquidity risk of participants is addressed by various CMU tools such as the intraday/overnight repo mechanism through which CMU participants experiencing temporary shortage of funds can raise short-term liquidity</li> <li>7.5 measures to manage risks arising in the event of a CMU participant default are described under our response to Principle 13 (Default Management)</li> </ul>

<b>Principle 8: Settlement finality</b>	An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real-time.
<b>Summary Disclosure</b>	<p>The CMU provides clear and certain final settlement in both intraday and real-time modes:</p> <p>8.1 the CMU offers clear and certain final settlement in real-time settlement on a gross basis (BIS Model 1)</p> <p>8.2 the PSSVFO provides statutory settlement finality protection for securities transfer instructions settled in the CMU system</p> <p>8.3 the RTGS systems in Hong Kong, with which the CMU system has seamless interface, are also subject to the PSSVFO which safeguards settlement finality of the money leg of the relevant securities transactions</p> <p>8.4 the CIPS which used to settle Southbound Bond Connect transactions is abide by Principles for Financial Market Infrastructures in terms of system design and rule establishment.</p> <p>8.5 the CMU rules and procedures state that once a securities transfer instruction is settled in the CMU system and posted to participant's securities account, it is considered final and irrevocable</p>

<b>Principle 9: Money settlements</b>	<p>An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimise and strictly control the credit and liquidity risk arising from the use of commercial bank money.</p>
<b>Summary Disclosure</b>	<p>Central bank money is involved for HKD payments, and commercial bank money is involved for USD, RMB and Euro payments.</p> <p>9.1 for securities transactions settled over the CMU, the securities legs are settled across the participants' securities settlement accounts with the HKMA. Except for Southbound Bond Connect transactions, the money settlement legs are effected through settlement accounts of the CMU participants or their correspondent banks maintained with the SIs/CB of the RTGS systems. This can be made available by the seamless interface between the CMU system and the various RTGS systems in Hong Kong</p> <p>9.2 except for Southbound Bond Connect transactions, for Hong Kong dollar-denominated securities settlement, the transactions will be settled through the settlement accounts maintained with the HKMA in the form of central bank money</p> <p>9.3 except for Southbound Bond Connect transactions, for US dollar, euro and renminbi-denominated securities settlements, the transactions will be settled through the settlement accounts maintained with the SI of the USD CHATS (HSBC), Euro CHATS (Standard Chartered Bank (Hong Kong) Ltd) and the CB of the RMB CHATS (Bank of China (Hong Kong) Ltd) respectively in the form of commercial bank money</p> <p>9.4 SIs for USD and Euro CHATS are commercial banks appointed by the HKMA while the CB for RMB CHATS is appointed by the PBOC. Though commercial bank money is used for money settlement involving USD, euro, renminbi and other foreign currencies, potential credit and liquidity risks are minimal as they are licensed banks in Hong Kong and subject to the stringent supervision of the HKMA. Supervision of licensed banks is performed by the Banking Supervision Department of the HKMA rather than by the CMU. The RTGS systems are also under the oversight of the FMIO team of the HKMA based on the requirements under the PSSVFO and PFMI.</p> <p>9.5 Through the seamless interface with the CMU's collateral management system. The SIs/CB of the RTGS systems are able to provide intraday or overnight repo facility to participants to facilitate their liquidity management</p>

	9.6 4 the CIPS, which used to settle Southbound Bond Connect Transaction, is a wholesale payment system authorized by the PBOC in the Mainland. The CIPS conducts business under supervision and administration of the PBOC in accordance with rules and regulations including Business Rules on Cross-border Interbank Payment System (CIPS), Guidelines on Business Operation of CIPS, CIPS Participants Agreement, etc.
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<b>Principle 10: Physical deliveries</b>	An FMI should clearly state its obligations with respect to the delivery of physical instruments or commodities and should identify, monitor, and manage the risks associated with such physical deliveries.
<b>Summary Disclosure</b>	<p>The CMU does not accept physical delivery of debt securities by CMU participants. Debt securities lodged with the CMU are either dematerialised or immobilised:</p> <p>10.1 the depository function to safe-keep global notes is outsourced to CMU's sub-custodian. The CMU follows an established set of procedures to regularly identify potential risks and assess the effectiveness of control measures related to the outsourcing of its depository function</p> <p>10.2 securities records of the sub-custodian are reconciled periodically with the records of the CMU to ensure the records are kept properly</p>

<b>Principle 11: Central securities depositories</b>	<p>A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues and minimise and manage the risks associated with the safekeeping and transfer of securities. A CSD should maintain securities in an immobilised or dematerialised form for their transfer by book entry.</p>
<b>Summary Disclosure</b>	<p>CMU has clear rules and procedures to safeguard the rights of securities issuers and holders. Debt securities lodged with the CMU are either dematerialised or immobilised:</p> <p>11.1 the rights and responsibilities of securities issuers and holders are carefully considered and stipulated in CMU documents (including the CMU Membership Agreement and the CMU reference manual), which are prepared, reviewed and approved by relevant units of the HKMA</p> <p>11.2 besides adopting robust accounting practices, stringent procedures are in place governing creation/cancellation of securities records in the system's database. There are also control measures (including internal/external audits) to ensure securities holdings of CMU participants are properly accounted for, and reconciliation reports are provided daily to CMU participants to facilitate their reconciliation with their own records</p> <p>11.3 all debt securities cleared through the CMU are either immobilised or dematerialised with transfer of title being effected in computerised book-entry form. Dematerialisation and book-entry transfer are recognised by the laws of Hong Kong</p> <p>11.4 the CMU requires its participants to segregate their proprietary holdings from their customers. This is catered for by the account structure within the CMU system which allows each participant to have one general custody account as well as one or more specific custody account(s)</p> <p>11.5 to ensure that securities records are complete and accurate, periodic reconciliation of the total number of global notes lodged with the CMU system against the record of CMU's sub-custodian is performed. This is to ensure that both the physical certificates and book-entry record tally with each other</p>

<b>Principle 12: Exchange-of- value settlement systems</b>	<p>If an FMI settles transactions that involve the settlement of two linked obligations (for example, securities or foreign exchange transactions), it should eliminate principal risk by conditioning the final settlement of one obligation upon the final settlement of the other.</p>
<b>Summary Disclosure</b>	<p>CMU has implemented arrangements to eliminate principal risk for the settlement of securities transactions:</p> <p>12.1 through the seamless interface between the CMU and the RTGS systems in Hong Kong, debt securities transactions can be settled on a DvP basis in real-time gross settlement basis (BIS Model 1) to eliminate principal risk. This means that settlement of the securities leg of the transaction occurs, and only occurs, simultaneously with the settlement of the money leg of the transaction</p> <p>12.2 the PSSVFO further provides the legal basis for settlement finality of linked obligations in the CMU</p> <p>12.3 in respect of Southbound Bond Connect transactions, the CMU established interface connection with the Mainland CIPS such that payment requests are initiated on CIPS only upon CMU successfully holds up securities in seller's account in the CMU system. The interface minimizes the principal risk by conditioning the settlement of securities leg and money leg of the DvP transactions in two systems.</p>

<b>Principle 13: Default Management</b>	<p>An FMI should have effective and clearly defined rules and procedures to manage a participant default. These rules and procedures should be designed to ensure that the FMI can take timely action to contain losses and liquidity pressures and continue to meet its obligations.</p>
<b>Summary Disclosure</b>	<p>The CMU has effective and clearly defined rules and procedures to manage participant default:</p> <ul style="list-style-type: none"> <li>13.1 the CMU does not guarantee settlement of debt securities transactions, and thus will not incur any loss or liquidity risk due to any CMU participant default</li> <li>13.2 CMU rules and procedures for managing a participant default have been set out in the CMU Membership Agreement and other relevant CMU documentations</li> <li>13.3 In general, in the event of a participant default, the CMU will continue to provide services to its participants as usual and the daily settlement process will not be affected. However, the defaulting participant will be prevented from accessing the CMU system and its accounts will be frozen until the HKMA authorizes otherwise. All settled trades involving the defaulting participant are final and irrevocable, and all unsettled transactions involving the defaulting participant will be cancelled</li> <li>13.4 Since the assets of a participant's customer are segregated from those of the participant, and do not form part of the assets of the participant, in case of an insolvency of a CMU participant the customer may instruct that his/her assets be moved to a solvent participant. Proprietary assets of the defaulted participant will be suspended until further notice</li> <li>13.5 Certain CMU services may have separate rules and procedures to deal with participant default, and such default rules are set out in the relevant terms and conditions of the CMU service concerned</li> </ul>

<b>Principle 14: Segregation and portability</b>	A CCP should have rules and procedures that enable the segregation and portability of positions of a participant's customers and the collateral provided to the CCP with respect to those positions.
<b>Summary Disclosure</b>	Not applicable to the CMU as this principle is not applied to CSD and SSS according to the PFMI.

<b>Principle 15: General Business Risk</b>	An FMI should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue providing operations and services as a going concern if those losses materialise. Further, liquid net assets should at all times be sufficient to ensure a recovery or orderly wind-down of critical operations and services.
<b>Summary Disclosure</b>	<p>Not applicable to the HKMA as the system operator and owner of the CMU, since the HKMA is Hong Kong's central banking institution.</p> <p>CMU OmniClear, which assists the HKMA in the operation of the CMU, is a wholly owned subsidiary of the Exchange Fund and is financially backed by the Exchange Fund. This ensures that CMU OmniClear has sufficient equity and liquidity at all times.</p>

<b>Principle 16: Custody and investment risks</b>	<p>An FMI should safeguard its own and its participants' assets and minimise the risk of loss on and delay in access to these assets. An FMI's investments should be in instruments with minimal credit, market, and liquidity risks.</p>
<b>Summary Disclosure</b>	<p>The HKMA/CMU has prudent investment and risk management policies and procedures to safeguard its own and its participants' assets:</p> <ul style="list-style-type: none"> <li>16.1 neither the CMU nor CMU OmniClear holds any financial investments apart from cash</li> <li>16.2 the Exchange Fund are invested in accordance with the investment and risk management policy of the Exchange Fund, a description of which can be found in the website and annual report of the HKMA</li> <li>16.3 except in the case of holding securities for participants in accounts that the CMU maintains with ICSDs/CSDs, the CMU does not receive or hold participants' assets. Documentation, rules and procedures for participating in ICSDs/CSDs are carefully prepared by in-house legal counsels of the HKMA to ensure that the rights and obligations of the CMU are fully protected</li> <li>16.4 the CMU provides a depository service to safekeep the physical global certificates lodged by debt securities issuers or lodging agents, and outsources such depository service to a selected sub-custodian which is subject to prudent assessment and selected on merit. Reviews are conducted periodically to ensure that relevant control and security features are in place and up to standard, and to reconcile the sub-custodian's records with those of the CMU. The appointed sub-custodian is located in Hong Kong and thus under the supervision of the appropriate local supervisory authority. Prompt access to assets under custody is also safeguarded by provisions in the service agreement with the appointed sub-custodian which is subject to the laws of Hong Kong</li> </ul>

<b>Principle 17: Operational risks</b>	<p>An FMI should identify the plausible sources of operational risk, both internal and external, and mitigate their impact through the use of appropriate systems, policies, procedures, and controls. Systems should be designed to ensure a high degree of security and operational reliability, and should have adequate, scalable capacity. Business continuity management should aim for timely recovery of operations and fulfilment of the FMI's obligations, including in the event of a wide-scale or major disruption.</p>
<b>Summary Disclosure</b>	<p>Plausible sources of operational risk have been identified by the CMU and appropriate systems, policies, procedures and controls have been designed and implemented to address such risks:</p> <ul style="list-style-type: none"> <li>17.1 CMU OmniClear, which assists the HKMA in the operation of the CMU, is subject to a stringent risk assessment and management framework. The framework requires regular assessments of all facets of risk relating to the CMU, and implementation of effective measures to pre-empt and address the applicable risks</li> <li>17.2 timely recovery of the CMU functions is ensured by the risk management and business continuity management processes of CMU OmniClear</li> <li>17.3 timely recovery of the computer operation of the CMU is ensured by the risk management and business continuity management processes of HKICL</li> </ul> <p>In respect of the operation of the computer system of the CMU:</p> <ul style="list-style-type: none"> <li>17.4 the HKMA has appointed HKICL to oversee the day-to-day operation of the computer system of the CMU</li> <li>17.5 the HKICL Board assigns operational reliability performance targets and imposes stringent operational risk management requirements. It pays particular attention to ensuring operational resilience and business continuity arrangements. Also, HKICL has established plans to ensure cyber resilience.</li> <li>17.6 the operational policies, procedures and controls of HKICL are designed to meet the objectives of maintaining a high level of system availability (over 99.5%) of the CMU system. They are regularly reviewed and tested thoroughly before and after significant changes are launched. The systems are designed to be scalable to accommodate stress volumes under prevailing performance levels and are tested</li> </ul>

	<p>before going live. The computer systems and controls, and operational policies and procedures are subject to regular computer audits, operational audits and certification audits (ISO standards) carried out by external auditors/certification authorities</p> <p>17.7 the HKICL has established plan to observe the Guidance on Cyber Resilience for Financial Market Infrastructures issued by CPMI-IOSCO and the Cybersecurity Fortification Initiative issued by HKMA in addressing cyber threats</p> <p>17.8 the HKICL employs comprehensive business contingency plan (BCP) arrangements to cater for events posing a significant risk of disrupting operations, including events that could cause a wide-scale or major disruption</p> <p>17.9 the BCP includes arrangements for HKICL to respond to unplanned service disruption to the CMU and aims at facilitating timely resumption of the service of the CMU in the event of a disruption</p> <p>17.10 the BCP is reviewed regularly and updated when necessary. Procedures are in place to ensure that it reflects the latest system changes.</p>
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<b>Principle 18: Access and participation requirements</b>	<p>An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.</p>
<b>Summary Disclosure</b>	<p>The CMU has objective, risk-based and publicly disclosed criteria for participation, which permit fair and open access:</p> <p>18.1 usage of CMU services is voluntary and participation is not compulsory. CMU participants can be either Recognized Dealers (RD) of EFBN and Government Bonds or CMU Members, or both. RDs are entitled to hold EFBN and Government Bonds while CMU Members are entitled to hold CMU Instruments</p> <p>18.2 Authorized Institutions in Hong Kong under the Banking Ordinance (BO) may apply to become RD of EFBN. Application from other financial institutions (overseas or otherwise) may also be considered at the discretion of the HKMA</p> <p>18.3 A financial institution regulated by any one of the following authorities may apply to become a CMU Member: (i) HKMA; (ii) Securities and Futures Commission; (iii) Insurance Authority; or (iv) Mandatory Provident Fund Schemes Authority. CMU membership may be granted to such a financial institution, or to any institution (overseas or otherwise) not regulated by an authority referred to above, subject to the discretion of the HKMA</p> <p>18.4 the entry criteria are objective and risk-based (the majority are AIs and LCs subject to the supervision of the HKMA and the SFC respectively). Such criteria have been publicly communicated on the HKMA website/CMU OmniClear website</p> <p>18.5 suspension and exit arrangements are covered in the CMU Membership Agreement and Reference Manuals, which constitute a contract between the CMU and its participants. CMU participants may exit the CMU system voluntarily or involuntarily. In the latter case, CMU may suspend a CMU participant from participating in the system based on legitimate reasons (e.g. revocation of banking licence) in accordance with the CMU rules and procedures</p> <p>18.6 as set out in the CMU Membership Agreement, the CMU Member's membership may be terminated with immediate effect upon the making of a bankruptcy or winding up order, or the passing of a resolution for voluntary winding up, in relation to the CMU Member</p>



<b>Principle 19: Tiered participation arrangements</b>	An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.
<b>Summary Disclosure</b>	Not applicable to the CMU. The CMU adopts a single-tier membership structure and has no tiered participation arrangements.

<b>Principle 20: FMI links</b>	An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.
<b>Summary Disclosure</b>	<p>The CMU has identified, monitored and managed the risks arising out of its link with other FMIs:</p> <p>20.1 the CMU has set up cross-border one-way links with CSDs in Australia (AustraClear) and Taiwan (TDCC), as well as two-way links with South Korea (KSD), Mainland China (CCDC and SHCH) and ICSDs such as Clearstream and Euroclear</p> <p>20.2 the CMU has also established a two-way link with HKSCC and three one-way links with HKCC, SEOCH and OTC Clear in Hong Kong. In addition, the CMU has seamless interface with the HKD, USD, Euro and RMB CHATS in Hong Kong and joined the Mainland's CIPS as direct participant in order to provide DvP service</p> <p>20.3 processes are in place to identify and manage potential sources of link-related risk (e.g. legal, credit, system, operational risks). Before establishing FMI links, the HKMA evaluates the risk and adequacy of the legal framework governing the links. Legal documentation is reviewed by in-house legal counsel. Risk assessments are also conducted to ensure that the linkage service providers are of high credit quality, and the CMU regularly reviews the credit ratings of the linked FMIs</p>

<b>Principle 21: Efficiency and effectiveness</b>	An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.
<b>Summary Disclosure</b>	<p>The CMU is effective and efficient in meeting the requirements of its participants and the markets it serves:</p> <p>21.1 apart from operating the CMU, the HKMA is also responsible for formulating long-term strategy to promote the development, operational excellence, safety and efficiency of the financial infrastructure in Hong Kong.</p> <p>21.2 the effectiveness, efficiency and safety of the CMU is further ensured by the oversight of the FMIO team of the HKMA</p> <p>21.3 the CMU system has established quantifiable objectives on up time and system availability performance, which are measured against and monitored constantly. Since inception, the CMU has met the objectives of providing a reliable and efficient debt securities clearing and settlement system and maintaining Hong Kong as an international financial centre</p> <p>21.4 the CMU also collaborates with relevant stakeholders (including CMU participants, HKICL) in the design and implementation stages when devising measures to enhance the system's operating efficiency, effectiveness and safety</p>

<b>Principle 22 : Communication procedures and standards</b>	<p>An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording.</p>
<b>Summary Disclosure</b>	<p>The CMU has adopted internationally-accepted communication procedures and standards to facilitate efficient clearing, settlement and recording of debt securities transfers:</p> <p class="list-item-l1">22.1 the CMU system adopts SWIFT (SWIFTNet) messaging services, including FIN, InterAct, Browse and FileAct, to process debt securities transfer instructions. Message type standards ISO15022 and 20022 are both supported by CMU. The use of SWIFT standards facilitates overseas users to access CMU via SWIFTNet in the same manner as local users without the need of any proprietary technology or special arrangements. Hence, the operating procedures, processes, and systems used by the overseas users and local users are the same</p> <p class="list-item-l1">22.2 the CMU has also installed proprietary front-end systems provided by other ICSDs/CSDs to facilitate communication with the ICSDs/CSDs which are linked with the CMU</p> <p class="list-item-l1">22.3 besides installing front-end systems, the CMU also establishes system interface, adopts SWIFT messaging services with the ICSDs/CSDs and payment systems to improve straight-through-processing.</p>

<b>Principle 23: Disclosure of rules, key procedures, and market data</b>	<p>An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. All relevant rules and key procedures should be publicly disclosed.</p>
<b>Summary Disclosure</b>	<p>The CMU has clear and comprehensive rules and procedures, and has provided sufficient information to enable participants to have an accurate understanding of the risks, fees, and other material costs they incur by participating in the FMI. Key features and procedures of the CMU, as well as system turnover statistics, have been publicly disclosed:</p> <p class="list-item-l1">23.1 the role and objectives of the HKMA as the system operator of the CMU have been publicly disclosed in various publications and the website of the HKMA</p> <p class="list-item-l1">23.2 the key features of the CMU system, including settlement modes and settlement finality have been publicly disclosed in various publications and the website of the HKMA. Fee schedules, as well as the CMU reference manual, which cover relevant rules and key procedures of CMU, have been publicly disclosed on the website of the HKMA</p> <p class="list-item-l1">23.3 the detailed operating rules and procedures, the rights and obligations of the HKMA as the system operator of the CMU and the CMU participants, as well as the fee schedule of the CMU are covered in various documents (e.g. CMU Membership Agreement, terms and conditions for specific CMU services, the CMU reference manual, etc.) and other communications issued by the CMU to CMU participants</p> <p class="list-item-l1">23.4 transaction data including turnover statistics and outstanding amounts of debt securities are published on the website of the HKMA</p>

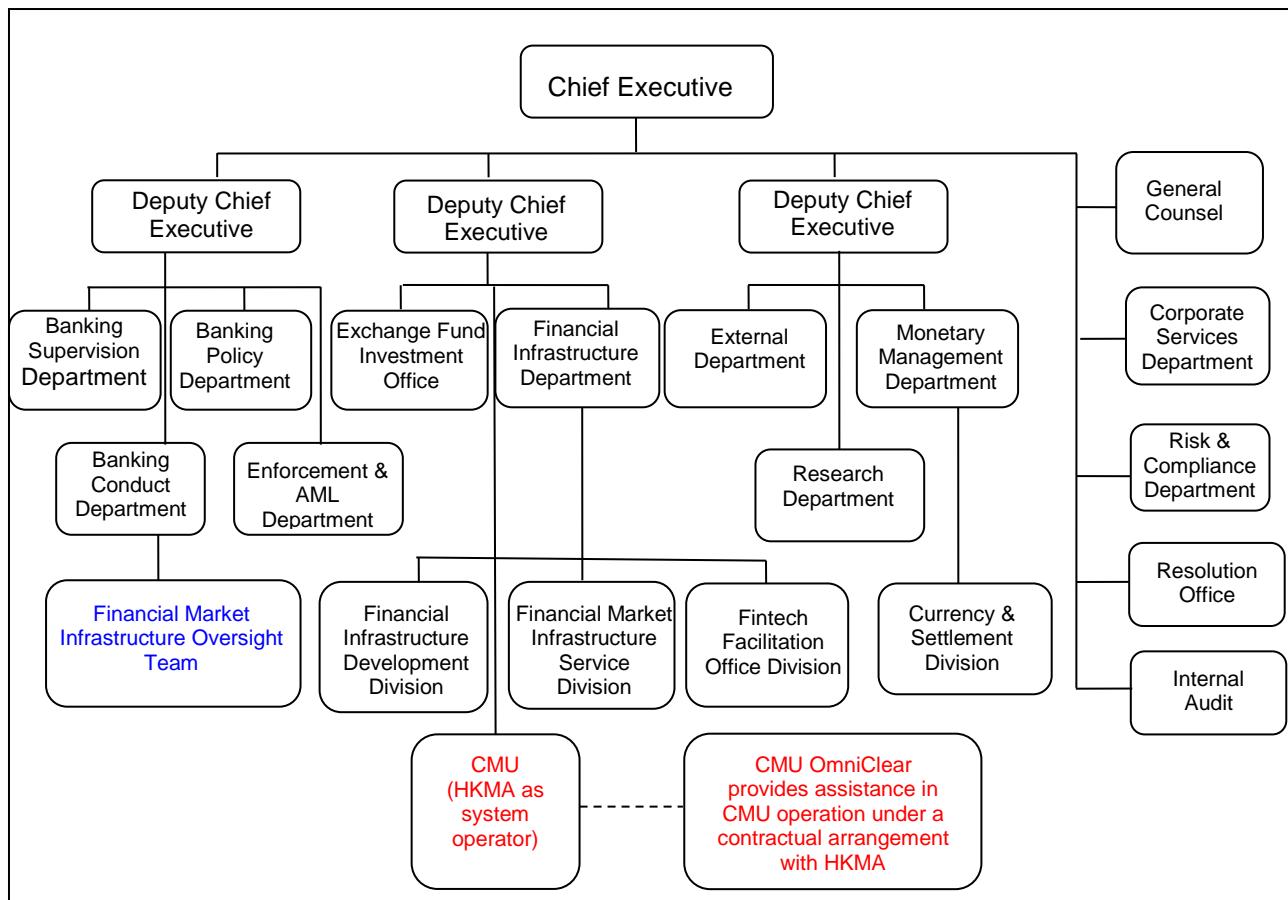
<b>Principle 24: Disclosure of market data by trade repositories</b>	A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.
<b>Summary Disclosure</b>	Not applicable to the CMU as this principle is not applied to CSD and SSS according to the PFMI.

## V. List of publicly available resources

List of public resources relevant to CMU	Website
1. EFO	<a href="https://www.elegislation.gov.hk/hk/cap66">https://www.elegislation.gov.hk/hk/cap66</a>
2. PSSVFO	<a href="https://www.elegislation.gov.hk/hk/cap584">https://www.elegislation.gov.hk/hk/cap584</a>
3. Policy Statement - Oversight of Financial Market Infrastructures by the Hong Kong Monetary Authority	<a href="http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/FMI_oversight.pdf">http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/FMI_oversight.pdf</a>
4. Oversight Framework for Designated Clearing and Settlement Systems - A Guideline issued by the Monetary Authority under the PSSVFO	<a href="http://www.gld.gov.hk/egazette/pdf/20162020/egn201620202777.pdf">http://www.gld.gov.hk/egazette/pdf/20162020/egn201620202777.pdf</a>
5. Application of Principles for Financial Market Infrastructures to Designated Clearing and Settlement Systems – A Guideline issued by the Monetary Authority under the PSSVFO	<a href="http://www.gld.gov.hk/egazette/pdf/20162020/egn201620202778.pdf">http://www.gld.gov.hk/egazette/pdf/20162020/egn201620202778.pdf</a>
6. Explanatory Note on Designation and Issuance of Certificate of Finality of Clearing and Settlement Systems under the PSSVFO	<a href="http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/explanatory_note.pdf">http://www.hkma.gov.hk/media/eng/doc/key-functions/banking-stability/oversight/explanatory_note.pdf</a>
7. HKMA Annual Report	<a href="http://www.hkma.gov.hk/eng/data-publications-and-research/publications/annual-report/">http://www.hkma.gov.hk/eng/data-publications-and-research/publications/annual-report/</a>
8. HKICL	<a href="http://www.hkicl.com.hk">www.hkicl.com.hk</a>
9. CMU – Main scope of services and other key features	<a href="http://www.hkma.gov.hk/eng/key-functions/international-financial-centre/financial-market-infrastructure/debt-securities-settlement-system/">http://www.hkma.gov.hk/eng/key-functions/international-financial-centre/financial-market-infrastructure/debt-securities-settlement-system/</a>
10. HKMA Quarterly Bulletin	<a href="http://www.hkma.gov.hk/eng/publications-and-research/quarterly-bulletin/">http://www.hkma.gov.hk/eng/publications-and-research/quarterly-bulletin/</a>

11.	HKMA Statistical Bulletin	<a href="http://www.hkma.gov.hk/eng/market-data-and-statistics/monthly-statistical-bulletin/">http://www.hkma.gov.hk/eng/market-data-and-statistics/monthly-statistical-bulletin/</a>
12.	List of Recognized Dealers	<a href="http://www.hkma.gov.hk/media/eng/doc/key-functions/financial-infrastructure/infrastructure/cmup8027.pdf">http://www.hkma.gov.hk/media/eng/doc/key-functions/financial-infrastructure/infrastructure/cmup8027.pdf</a>
13.	List of CMU Members	<a href="http://www.hkma.gov.hk/media/eng/doc/key-functions/financial-infrastructure/infrastructure/cmup8030.pdf">http://www.hkma.gov.hk/media/eng/doc/key-functions/financial-infrastructure/infrastructure/cmup8030.pdf</a>
14.	CMU Tariff	<a href="http://www.hkma.gov.hk/media/eng/doc/key-functions/financial-infrastructure/infrastructure/CMU_fee_schedule.pdf">http://www.hkma.gov.hk/media/eng/doc/key-functions/financial-infrastructure/infrastructure/CMU_fee_schedule.pdf</a>
15.	CMU reference manual	<a href="https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/financial-market-infrastructure/debt-securities-settlement-system/">https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/financial-market-infrastructure/debt-securities-settlement-system/</a>
16.	CMU OmniClear website	<a href="https://www.CMUOmniClear.com">https://www.CMUOmniClear.com</a>

Annex. Organisation Chart of the HKMA and Relationship with CMU OmniClear



Notes:

Entities relevant to CMU operation are marked in red.

The HKMA team overseeing the CMU is marked in blue.