



HONG KONG MONETARY AUTHORITY  
香港金融管理局

*Assessment of Central Moneymarkets Unit  
against the  
Principles for Financial Market Infrastructures*

*August 2016*

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# **Assessment of Central Moneymarkets Unit against the Principles for Financial Market Infrastructures**

## **I. Executive summary**

This report contains the assessment of the Hong Kong Monetary Authority (HKMA) (via the Financial Market Infrastructure Oversight (FMIO) team of the Financial Market Infrastructure Oversight & Licensing Division (FMIOLD)) on the Central Moneymarkets Unit (CMU). The CMU is a debt securities clearing and settlement system which provides clearing, settlement and custodian services for debt securities issued by both public and private sector entities. The objective of the assessment is to evaluate how well CMU observes the Principles for Financial Market Infrastructures (PFMI) issued jointly by the Committee on Payments and Market Infrastructures (CPMI)<sup>1</sup> of the Bank for International Settlements and the Technical Committee of the International Organization of Securities Commissions (IOSCO) in April 2012.

The assessment was conducted in accordance with the approach and rating system set out in the “Principles for financial market infrastructures: Disclosure framework and Assessment methodology” issued by CPMI-IOSCO.

The assessment finds that the CMU observes all the relevant principles (i.e. Principles 1 – 5, 7 – 9, 11 – 13, 15 – 18 and 21 – 23) in the assessment period, based on the rating system of CPMI-IOSCO. The remaining principles (Principles 6, 10, 14, 19 and 24) are not applicable to the CMU. The assessment includes recommended actions to be taken by the CMU to further enhance the safety and efficiency of the system. The recommended actions<sup>2</sup> relate to Principles 13 and 17 and are summarised in Table 2 of Part IV of this document.

The HKMA will conduct future assessments in accordance with the requirements of the PFMI regularly.

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<sup>1</sup> The CPMI was formerly known as the Committee on Payment and Settlement Systems (CPSS) before September 2014.

<sup>2</sup> The recommended actions in relation to Principles 13 and 17 are not issues of concern but are of a nature that the system could consider taking them up in the normal course of business. According to the assessment methodology, these will not affect the observed rating of these principles.

## **II. Introduction**

The CMU is the debt securities clearing and settlement system in Hong Kong, which provides clearing, settlement and custodian services for debt securities issued by both public and private sector entities denominated in Hong Kong dollars and other major currencies. Because of its importance to the monetary and financial stability in Hong Kong, the CMU meets the criteria for classification as a financial market infrastructure (FMI). The present document is the assessment of CMU based on the CPMI-IOSCO PFMI.

The assessment was conducted by the FMIO team of the HKMA, which is the overseer of the CMU.

The CMU is a securities settlement system (SSS) and central security depository (CSD). It is linked to other financial market infrastructures (FMIs) to provide clearing, settlement and custodian services. The assessment covers all the PFMI which are applicable to an SSS and CSD. All the clearing, settlement and custodian services provided by the CMU and its links with the FMIs are within the scope of the assessment.

The information used in the assessment includes all the relevant laws, rules and procedures governing the CMU as well as the oversight information available to the HKMA, as the overseer of the CMU. The oversight information includes monthly returns on turnover and performance of the system, incident reports, information gathered during on-site reviews and regular meetings with the management, and a self-assessment conducted by CMU in April 2013. The assessment was made based on the position as at 30 April 2016.

The HKMA did not encounter any particular difficulties in obtaining the information required to conduct the assessment.

This is the first assessment report on the CMU against the PFMI. It will be reviewed every two years, or more frequently if required when there is material change to the system.

### **III. Overview of the clearing and settlement landscape**

#### ***Introduction***

To support the objective of developing Hong Kong as an international financial centre and a regional settlement hub, the HKMA plays an important role in developing the financial infrastructure of Hong Kong. This is one of the policy objectives of the HKMA.

The CMU commenced operation in 1990. It is the debt securities clearing and settlement system operated by the HKMA, which provides clearing, settlement and custodian services for debt securities issued by both public and private sector entities denominated in Hong Kong dollars and other major currencies. These debt securities include Exchange Fund Bills and Notes<sup>3</sup> (EFBN), HKSAR Government Bonds, and other debt securities issued by both public and private sector entities.

Currently, apart from the CMU, FMIs under the purview of the HKMA include multi-currency payment systems for the settlement of interbank payments, system links to facilitate payment versus payment (PvP) and delivery versus payment (DvP) services, and external links to facilitate cross-border transactions. In addition, the HKMA operates a trade repository that maintains an electronic database of records of over-the-counter (OTC) derivatives transactions. FMIs which are not under the purview of the HKMA, include the central counterparties (CCP) for securities, futures and options and OTC derivatives transactions and the securities settlement system for stocks and futures<sup>4</sup>.

#### ***Operations and services of CMU***

The CMU system operates from 08:30 to 05:15 of the next calendar day (Hong Kong Time) every Monday to Friday. The CMU is operated by the HKMA through its Payment Systems Operation Division (PSOD) of the Financial Infrastructure Department (FID), which is responsible for the day-to-day operations of the CMU. The HKMA has outsourced the computer operation of the CMU to

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<sup>3</sup> Exchange Fund Bills and Notes are Hong Kong dollar debt securities issued by the HKMA. They constitute direct, unsecured, unconditional and general obligations of the Hong Kong Special Administrative Region Government for the account of the Exchange Fund and have the same status as all other unsecured debt of the Government.

<sup>4</sup> These FMIs are under the purview of the Securities and Futures Commission in Hong Kong.

Hong Kong Interbank Clearing Limited (HKICL), which is jointly and equally owned by the HKMA and Hong Kong Association of Banks (HKAB), based on the terms and conditions set out in the service agreement signed between the HKMA and HKICL.

### System infrastructure

The CMU maintains seamless interface with the four interbank payment systems in Hong Kong, known as HKD, USD, Euro and RMB Clearing House Automated Transfer Systems (CHATs) (also referred to as Real Time Gross Settlement (RTGS) systems) to effect fund transfers relating to securities transactions on a DvP basis through the banks' settlement accounts maintained with Settlement Institutions (SIs) for HKD, USD and Euro CHATS or the Clearing Bank (CB) for RMB CHATS.

The CMU has established external links with regional and international CSDs. 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 CSDs. To date, the CMU has developed links with CSDs in Australia, South Korea, Mainland China, Taiwan and international CSDs including Euroclear and Clearstream.

The CMU also maintains a two-way link with the Hong Kong Securities and Clearing Company Limited (HKSCC) to clear and settle Hong Kong equities on behalf of participants in rare situations when the securities are settled by way of equities instead of cash for equity-linked debt securities. The HKFE Clearing Corporation Limited (HKCC), SEHK Options Clearing House Limited (SEOCH) and OTC Clearing Hong Kong Limited (OTC Clear), which are central counterparties, also maintain accounts with the CMU for collateral purposes. For HKCC, settlement also takes place after the close of the last trading day of the EFN futures contracts whereas HKCC participant that has short EFN positions will deliver EFN to HKCC participant that has long EFN positions in exchange of funds through the real-time DvP facility of the CMU.

CMU participants can access the CMU to manage their securities accounts through CMU Member Terminals (CMT). Two types of CMT are available: (a) eCMT – a front-end browser software which enables CMU participants to connect to the CMU through SWIFTNet; (b) iCMT - another type of front-end browser software

which enables CMU participants to connect to the CMU through the internet. eCMT and iCMT are collectively known as CMT. CMU participants may also send securities transfer instructions to the CMU via File Transfer Service (FTS) and FileAct via the SWIFT network.

### Settlement mechanism

The CMU is a DvP system. The securities transactions can be settled on a gross or multilateral netting basis during the CMU settlement run scheduled at 16:00 each day. The real-time DvP arrangement for CMU transactions is in line with the Model 1 approach identified by the Bank for International Settlements (BIS), where securities and funds are settled simultaneously on a gross basis, whereas the CMU settlement run adopts the Model 3 approach in which the final transfer of securities is made simultaneously with the final transfer of funds on a multilateral netting basis.

To support the DvP mechanism, the CMU is designed in such a way that when the system detects that the securities seller has sufficient securities for settlement of a transaction in his account, the corresponding amount of securities will be put on hold and the system will issue a payment request to the relevant RTGS system via the seamless interface between the CMU and RTGS systems. Upon confirmation from the relevant RTGS system that the required amount of funds is available in the buyer's account, simultaneous settlement of both the securities leg and cash leg of the transaction (DvP) will take place. Once settled, the transactions are considered final and irrevocable in accordance with the Payment Systems and Stored Valued Facilities Ordinance (PSSVFO).

The money settlement of securities transfers is performed through the seamless interface with the HKD, USD, Euro and RMB CHATSs. For bank participants, fund transfers in connection with the CMU are made as debits or credits to CMU participants' settlement accounts maintained with the SIs/CB. Non-bank participants engage banks as their correspondent banks for money settlement across the books of the SIs/CB.

As the HKMA is the SI of the HKD CHATS, settlement of HKD funds arising from securities transfers in the CMU constitutes settlement through central bank money. The settlement of US dollar, euro and renmenbi-denominated securities transactions is through commercial bank money via participants' settlement accounts with the SIs or CB.

The securities lodged with the CMU are either dematerialised or immobilised. Transfer of title is effected electronically through computer book entry across the book of HKMA. The HKMA has appointed the Hongkong and Shanghai Banking Corporation Limited (HSBC) as the sub-custodian for the safe-keeping of physical global instruments.

## Services

Apart from the core securities settlement services, the CMU also provides the following services to its members:

- Market making arrangements for EFBN
- Repo facility (intraday and 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
- Income distribution service<sup>5</sup>
- Investment fund order routing and settlement service
- Mandatory Provident Fund (MPF)<sup>6</sup> money settlement service

## Participation criteria and requirements

Participation in the CMU is voluntary. CMU participants can be either Recognised Dealers<sup>7</sup> (RD) of EFBN and Government Bonds or CMU Members, or both (collectively referred as CMU participants). RDs are entitled to hold EFBN and Government Bonds while CMU Members are entitled to hold CMU Instruments<sup>8</sup>. CMU adopts a single-tier membership structure in which eligible entities can join as

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<sup>5</sup> Income distribution is an additional service offered by the CMU to facilitate the CMU Members who are paying agents to distribute interest, coupon or redemption proceeds or all of them (collectively, the “income proceeds”) to the legal title holders of CMU Instruments via the CMU system.

<sup>6</sup> The MPF is the mandatory retirement saving scheme in Hong Kong.

<sup>7</sup> In Hong Kong, the Exchange Fund Bills and Notes Programmes adopt a two-tier dealership scheme. The HKMA has appointed Recognised Dealers and Market Makers to support, with different degrees of commitment, the development of the Exchange Fund Bills and Notes market. Recognised Dealers are financial institutions maintaining Securities Accounts with the HKMA for holding Exchange Fund papers. Market Makers, appointed from the pool of Recognised Dealers, are responsible for maintaining liquidity in the secondary market.

<sup>8</sup> CMU instruments refer to private or public debt securities other than EFBN and Government Bonds.



CMU participants and maintain securities accounts with the HKMA.

Institutions in Hong Kong authorized under the Banking Ordinance (BO) may apply to become RD of EFBN and Government Bonds. A financial institution regulated by any one of the following authorities, (i) the HKMA; (ii) the Securities and Futures Commission; (iii) the Office of the Commissioner of Insurance; or (iv) the Mandatory Provident Fund Schemes Authority, may apply to the Monetary Authority (MA)<sup>9</sup> to become a CMU Member. The MA may also appoint other institutions as RD or grant CMU membership to such institutions at his discretion.

CMU participants are required to comply with the PSSVFO, and the rules and procedures of CMU. At the end of April 2016, the CMU had 132 RDs and 202 CMU Members.

### *System statistics*

In 2015, despite a few minor system incidents with minimal operational impact, the system availability of CMU was continuously above the target of 99.95% for prime time and 99.5% for non-prime time<sup>10</sup>.

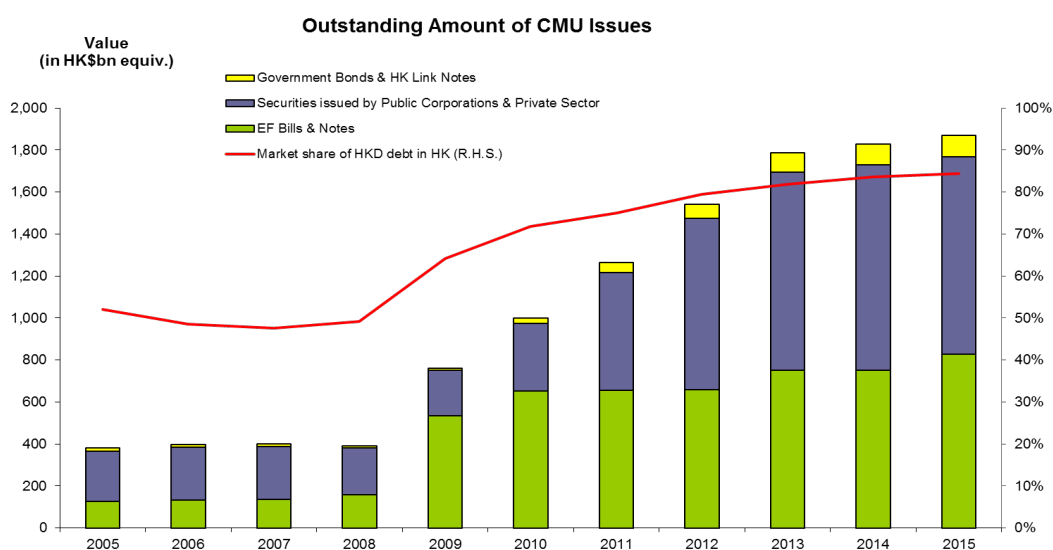
At the end of December 2015, the outstanding EFBN and Government Bonds amounted to HK\$928.8 bn and outstanding private sector debt securities amounted to HK\$940 bn equivalent (refer to Chart 1).

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<sup>9</sup> Hong Kong Monetary Authority (HKMA) is the institution of which the Monetary Authority (MA) is the chief executive and which is established with public officers appointed under the Exchange Fund Ordinance to assist the MA to perform his functions. In this document, we use the term “HKMA” instead of the legal name “MA” to describe its function as the overseer of the system.

<sup>10</sup> Prime time is defined as 08:30 – 05:15 of the next calendar day (all days except Saturdays, Sundays and 1 January). Non-prime time covers the rest of time other than the prime time excluding the time required for scheduled housekeeping tasks and maintenance. The system availability target is defined according to the Service Agreement between HKMA and HKICL.

Chart 1: Outstanding amount of debt securities lodged with the CMU



### *Oversight arrangement for CMU*

The Clearing and Settlement Systems Ordinance (CSSO), which came into effect on 4 November 2004, established a statutory regime for the MA to designate and oversee clearing and settlement systems (CSSs) which are material to the monetary and financial stability of Hong Kong or to Hong Kong as an international financial centre. The objective is to promote the general safety and efficiency of designated CSSs. As the overseer, the HKMA monitors the compliance of designated systems with the safety and efficiency requirements stipulated in the CSSO and, where appropriate, instigates changes to designated systems to bring them into compliance with the requirements.

On 13 November 2015, the CSSO was amended and retitled as the PSSVFO to introduce a regulatory regime for stored value facilities and retail payment systems in addition to the existing oversight framework for CSSs under the pre-amended CSSO. As far as the CSSs designated under the CSSO are concerned, all designations, certificates of finality and exemptions granted under the pre-amended CSSO, including CMU, continue to remain in effect under the PSSVFO.

The HKMA is empowered to issue explanatory notes and guidelines to explain its role, policies and requirements in relation to the designation and oversight of CSSs under the PSSVFO. For example, the HKMA has issued under section

54(1)(a) of the PSSVFO a Guideline on the Oversight Framework for Designated Clearing and Settlement Systems (“PSSVFO Guideline”) which explains the HKMA’s interpretation of the oversight requirements, including the safety and efficiency requirements under sections 7 and 8 of the PSSVFO, and the process that the HKMA intends to follow in its oversight of the designated CSSs.

The HKMA adopts international regulatory standards on FMIs in its oversight framework for designated CSSs. On 20 May 2016, the HKMA issued a separate guideline on Application of Principles for Financial Market Infrastructures to Designated Clearing and Settlement Systems under section 54(1)(a) of the PSSVFO. All designated clearing and settlement systems are required to observe the relevant PFMI applicable to them.

The CMU is deemed designated<sup>11</sup> under the PSSVFO and is granted a certificate of finality under the PSSVFO to provide statutory backing to the finality of settlement for transactions made through a designated system. This settlement finality is protected from insolvency and other laws. As a result, transactions settled through the CMU are final and irrevocable.

The financial market infrastructure oversight function of the HKMA under the PSSVFO is performed by the FMIO team within the FMIOLD under the Banking Conduct Department of the HKMA. The focus of FMI oversight is on the safety and efficiency of the designated CSS as a whole and the performance of settlement institution and system operator in managing and operating the designated CSS.

Separately, the HKMA undertakes the role of developer and facilitator of the financial infrastructures in Hong Kong, through the FID. There are effective “Chinese wall” arrangements to avoid any potential conflicts of interest. In particular, the FID and FMIOLD has separate reporting line up to senior executives of the HKMA.

### **Process Review Committee (PRC)**

The PRC was established in 2004 to review the processes and procedures adopted by the MA in making decisions relating to or affecting the designated CSSs

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<sup>11</sup> CMU was deemed designated under the CSSO since 4 November 2004 when the CSSO first came into effect. Further to the retitling of CSSO to PSSVFO, the CMU continues to be deemed designated under the PSSVFO as stipulated under Schedule 2 of the PSSVFO.

under the PSSVFO in which the MA has a legal or beneficial interest. The committee comprises members unconnected with the HKMA and appointed by the Chief Executive of the HKSAR. This arrangement helps ensure that the same set of oversight standards is applied to all designated CSSs, whether or not the MA has an interest in them. The PRC assesses whether the HKMA has applied the same procedures to all designated CSSs.

#### IV. Summary assessment

##### Recommendations for the FMI

The assessment finds that the CMU observes all relevant principles (i.e. Principles 1 – 5, 7 – 9, 11 – 13, 15 – 18 and 20 – 23) based on the rating system of CPMI-IOSCO<sup>12</sup>. The remaining principles (Principles 6, 10, 14, 19 and 24) are not applicable to CMU. Table 1 summarises the ratings for each principle. The assessment also identified recommended actions<sup>13</sup> to be taken by the CMU.

**Table 1 - Ratings summary**

<b>Assessment</b>	<b>Principle</b>
Observed	<i>Principles 1- 5, 7 – 9, 11 - 13, 15 – 18 and 21 - 23</i>
Broadly observed	<i>Nil</i>
Partly observed	<i>Nil</i>
Not observed	<i>Nil</i>
Not applicable	<i>Principles 6, 10, 14, 19 and 24</i>

<sup>12</sup> The assessment was made based on the position of CMU as at 30 April 2016.

<sup>13</sup> The actions are recommended to close the gaps or shortcomings identified during the assessment of CMU. These gaps are considered minor and manageable by the HKMA, and according to the Assessment Methodology, the gaps identified do not affect the rating of the system.

**Table 2 - List of recommended actions**

<b>Principle</b>	<b>Issue of concern or other gap or shortcoming</b>	<b>Recommended actions</b>
<i>To be addressed under normal course of business</i>		
13	<i>Lack of testing arrangement for participant default</i>	<i>While the participant default procedures are publicly disclosed, CMU should consider testing the default arrangements regularly with relevant parties.</i>
17	<i>Enhancing cyber resilience and business continuity arrangements</i>	<i>CMU should continue to review its approach to cyber security on an ongoing basis, in particular its mechanisms for preventing, detecting, responding to and recovering from cyber attacks, and its plans to enhance its business continuity arrangements, taking into account developments both in Hong Kong and overseas, including the international guidance on cyber resilience for financial market infrastructures published by the CPMI-IOSCO in June 2016.</i>

**Narrative summary key findings and recommendations**

**General organisation (Principles 1–3)**

The CMU has a sound and enforceable legal basis that supports each of the material aspects of the CMU’s activities. The relevant laws in Hong Kong provide a comprehensive and well-founded legal framework for the establishment and operation of the CMU. The legal framework provides a sound legal basis for the enforcement of rules governing irrevocability and finality of settlement. The rules,

procedures and contracts are properly articulated in a clear and understandable way and are consistent with relevant laws and regulations. Moreover, actions taken under such rules, procedures and contracts have not been voided or reversed by another administrative or judicial authority.

The CMU plays an important role in supporting Hong Kong as an international financial centre. It is an important FMI conducive to supporting the financial and monetary stability of Hong Kong. In support of these policies, the HKMA has governance arrangements to promote the safety and efficiency of the financial infrastructure through the development of payment, CSSs and the operation of these systems. The CMU is a designated CSS and is required to operate safely and efficiently under the PSSVFO. The CMU, which operates as a unit of the HKMA, is subject to the internal audit, risk assessment and management framework of the HKMA.

The CMU has developed robust risk management policies and procedures that enable it to manage the risks associated with the operation of the system. There are various risk management tools built into the system design to enable CMU participants to manage the risks they may face by participating in the system as well as the risks they may pose to the system. A business continuity plan (BCP) and regular drills are in place to ensure continuity or recovery of services during a crisis. The requirements to have recovery and resolution plan are not applicable to the CMU, which is owned and operated by the HKMA, Hong Kong's central banking institution.

### **Credit and liquidity risk management (Principles 4–7)**

The CMU is not exposed to credit risk to its participants since the CMU is not a central counterparty in any securities transactions and does not offer credit to its participants or guarantee settlement. The DvP feature and immediate finality of settlement insulate participants from credit risk. Transactions are only settled when there are sufficient securities in the settlement account of the participant. The credit risk arising from the provision of repo facilities is primarily mitigated through the use of high quality collateral with conservative haircuts as determined by the SIs/CB/CMU Member as the repo seller.

Collateral is not required in the CMU since the CMU does not offer credit to its participants. Collateral is required for the repo facilities offered by the SIs/CB of

the CHATSs in Hong Kong, bank-to-bank repo and cross-border triparty repo transactions. Since the intraday/overnight repos are offered by the SIs/CB of the RTGS systems, these parties, rather than the CMU, are responsible for determining the eligibility of securities to be used as collateral and for setting and enforcing conservative haircuts and concentration limits. The collateral management system of the CMU is well designed and operationally flexible to meet market needs.

The CMU is not exposed to liquidity risk since it does not guarantee settlement. The liquidity risk is borne by participants and the CMU provides a variety of tools to assist CMU participants to manage their liquidity risks and to promote the smooth operation of securities settlement. These tools have proved to be effective so far in managing the liquidity risk of the system.

### **Settlement (Principles 8–10)**

The CMU adopts both real-time settlement and multilateral settlement through the CMU settlement run. The CMU also offers various services to reduce settlement risk arising from shortage of funds or securities. Settlements in the CMU system are final and irrevocable under the PSSVFO. The CMU Reference Manual clearly defines the point at which settlement is final and irrevocable and the point at which unsettled instructions may be revoked by a participant. The CMU will introduce more periodic intraday settlement runs in 2017 to increase settlement efficiency and further reduce settlement risk.

The HKD transactions are settled in central bank money, while the foreign currency transactions are settled in commercial bank money through the seamless interface between the CMU and the CHATSs. The SIs, CB and other settlement banks are under the prudential supervision of the HKMA and are required to comply with the Basel requirements, including those relating to capital. The SIs and CB are also subject to the safety and efficiency requirements under the PSSVFO.

The CMU does not require physical deliveries in its clearing and settlement process as all securities are either immobilised or dematerialised.

### **Central securities depositories and exchange-of-value settlement systems (Principles 11–12)**

The rights of securities issuers and holders are adequately safeguarded in the

CMU under the existing legal framework and internal controls. Daily reconciliation reports are available for CMU participants. All CMU participants, except Market Makers, are prohibited from incurring short positions in any securities. Market Makers who incur short position must cover it with sufficient long position by entering into repo with the HKMA.

The CMU supports DvP transactions by linking with other CHATSs, all of which are designated CSSs under the PSSVFO. The DvP processes are supported by appropriate system software and its interface with the other designated CSSs. A DvP transaction will be settled only if the systems confirm that both the funds and securities are available. The payment and securities legs are settled at the same time. Once the DvP transactions are settled, they are final and irrevocable under statutory settlement finality protection of the PSSVFO.

#### **Default management (Principles 13–14)**

The CMU is a CSD and SSS, with no loss-sharing arrangement in case of default of participants. The CMU has developed rules and procedures to manage participant default which outline the discretionary procedures to be taken by the CMU in the event of a default. The CMU regularly reviews and refines its default procedures to ensure that they are practical and effective.

#### **General business and operational risk management (Principles 15–17)**

General business risk faced by the HKMA as the owner and operator of the CMU is minimal, since the HKMA is Hong Kong's central banking institution.

The CMU does not possess any assets on its own. Apart from securities lodged with and held in the CMU, the CMU also holds its participants' assets at supervised and regulated entities. Legal advice is sought to ensure ownership rights are protected. The CMU can generally achieve prompt access to assets as it only places assets with CSDs in regional jurisdictions with minimal time differences from Hong Kong and the settlement windows of ICSDs also covers the Asian time zone.

Both the CMU and HKICL have established robust risk-management frameworks covering operational risk with appropriate systems, policies, procedures and controls to identify, monitor, and manage operational risks. Both parties have developed robust physical and information security policies and controls, and are



required to make an annual declaration to the HKMA to confirm the arrangements continue to be in place and are kept under review.

The CMU has proved to be highly reliable and secure. HKICL continuously achieves system availability targets and ongoing monitoring and reviews are performed to ensure the CMU has adequate and scalable capacity. The BCP for the CMU is comprehensive and well-tested. Various system and network BCP drills are conducted annually. A hot back-up site has been set up to ensure timely recovery of operations in case of serious disruption.

### **Access (Principles 18–20)**

Participation in the CMU is voluntary. The CMU has objective, risk-based and publicly disclosed criteria for participation, which permit fair and open access. The rules and procedures stipulate the arrangements for handling accession of new participants, suspensions and exits of participants and communicating such events.

The CMU has established links with a number of ICSDs/CSDs. Processes are in place to identify, monitor, and manage related risks. Before establishing FMI links, the HKMA evaluates the risk and the 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 linked FMIs are of high credit quality.

### **Efficiency (Principles 21–22)**

The CMU ensures it is able to meet the needs of its participants and the market it serves via consultations with the industry and its major participants. The objectives set by the CMU for system availability are measurable and achievable. Mechanisms are in place to review efficiency and effectiveness. The CMU adopts internationally accepted communication standards to facilitate efficient clearing, settlement and recording of debt securities transfers. The operation of the CMU via SWIFT and the internet is smooth and satisfactory.

### **Transparency (Principles 23–24)**

The CMU has clear and comprehensive rules and procedures to facilitate participants to understand the risks, fees and other material costs they incur by

participating in the system. All relevant rules and key procedures are publicly disclosed on the HKMA website. Training, briefings and enquiry support are provided to participants. The basic features and essential information of the system are set out in the CMU Disclosure Framework, which is available on the HKMA's website.

## List of Abbreviations

BCP	Business Continuity Plan
BIS	Bank for International Settlements
BO	Banking Ordinance
CB	Clearing Bank
CCP	Central counterparty
CHATS	Clearing House Automated Transfer System
CMT	CMU Member Terminals
CMU	Central Moneymarkets Unit
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
CSS	Clearing and settlement system
CSSO	Clearing and Settlement Systems Ordinance (retitled as PSSVFO from 13 November 2015)
DvP	Delivery versus payment
EFBN	Exchange Fund Bills and Notes
FID	Financial Infrastructure Department
FMI	Financial market infrastructures
FMIO	Financial Market Infrastructure Oversight
FMIOLD	Financial Market Infrastructure Oversight and Licensing Division
FTS	File Transfer Service
HKAB	Hong Kong Association of Banks
HKD	Hong Kong Dollar
HKCC	HKFE Clearing Corporation Limited
HKFE	Hong Kong Futures Exchange Limited
HKICL	Hong Kong Interbank Clearing Limited
HKMA	The Hong Kong Monetary Authority
HKSAR	Hong Kong Special Administrative Region of the People's Republic of China
HKSCC	Hong Kong Securities Clearing Company Limited
HSBC	The Hongkong and Shanghai Banking Corporation Limited
ICSD	International Central Securities Depository
MA	The Monetary Authority
MPF	Mandatory Provident Fund

OTC Clear	OTC Clearing Hong Kong Limited
PFMI	Principles for Financial Market Infrastructures
PRC	Process Review Committee
PSOD	Payment Systems Operation Division
PSSVFO	Payment Systems and Stored Value Facilities Ordinance
RD	Recognised Dealer
RMB	Renminbi
RTGS	Real Time Gross Settlement
SEHK	The Stock Exchange of Hong Kong Limited
SEOCH	SEHK Options Clearing House Limited
SI	Settlement Institution
SSS	Securities settlement system
USD	US Dollar