

**Disclosure Report on the Assessment of  
Compliance on the CPMI-IOSCO  
Principles for Financial Market  
Infrastructures**

**(Disclosure for the CBC Central Government  
Securities Settlement System as an SSS)**

Department of the Treasury  
Central Bank of the Republic of China (Taiwan)  
September 2016

**Responding FMI:** CBC Central Government Securities Settlement System (CGSS)

**Jurisdiction in which the FMI operates:** R.O.C. (Taiwan)

**Authority overseeing the FMI:** Central Bank of the R.O.C. (Taiwan)

**Date of this disclosure:** September, 2016

**The website on which the disclosure report is posted:**

<http://www.cbc.gov.tw>.

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## **I. Executive Summary**

In 2012, the Committee on Payments and Market Infrastructures (CPMI) and the Technical Committee of the International Organization of Securities Commissions (IOSCO) published the *Principles for Financial Market Infrastructures* (the *PFMI*, or the *Principles*). The following report is prepared and disclosed by the Central Bank of the Republic of China (Taiwan) (the CBC) after it conducted assessments on the CBC-operated Central Government Securities Settlement System (CGSS) as a securities settlement system (SSS), based on the *PFMI* and the *Principles for Financial Market Infrastructures: Disclosure Framework and Assessment Methodology*.

The assessments aim to review the CGSS' observance of the *PFMI*, and, by doing so, to identify potential risks or management deficiencies and inform future improvements. Information taken into account for the assessments includes the CGSS' management rules and guidelines, operating procedures, system services and mechanisms, statistics, as well as comments from the CBC's inter-department task force.

The CGSS is established with a proper governance mechanism and a comprehensive risk management structure. The CGSS adopts real-time gross settlement (RTGS) mechanism to process book-entry transfers, and implements a delivery-versus-payment (DVP) mechanism to handle

interbank transactions, which are final and irrevocable. Furthermore, the CGSS was designed with relevant risk management policy and procedures towards risks that the system may derive or undertake. In addition to regularly reviewing the risk management structure, the CBC also has associated recovery plans, operating procedures, monitoring measures, and regular exercises on backup operations to ensure business continuity. The self-assessment results indicate that the CGSS has observed the *PFMI*.

## **II. The Background of the FMI**

### **1. An overview of the FMI and markets it serves**

Since the introduction of the CGSS in September 1997, central government bonds have been issued in the book-entry form. In October 2001, book-entry treasury bills were further added to the system. The CGSS linking the CBC and clearing banks, adopts an RTGS mechanism for the issuance, buyback, transfer, and principal and interest payment of the central government securities (CGS) in the form of accounting entries on computer records.

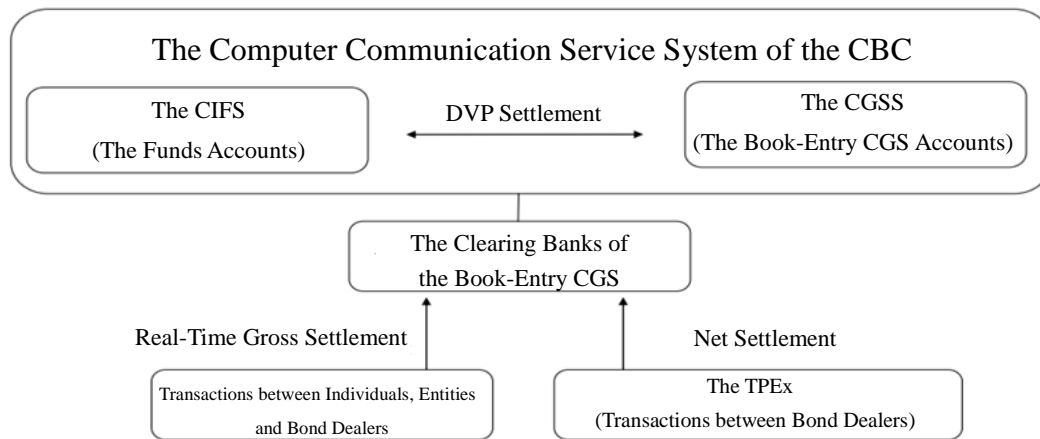
Beginning October 2001, outright transactions of book-entry CGS among bond dealers must be netted via the Electronic Bond Trading System (EBTS) operated by the Taipei Exchange (TPEX), and funds settlement of such transactions has been handled via the CBC Interbank Funds Transfer System (CIFS) since July 2007. Transactions of book-entry CGS among bond dealers are first netted via the EBTS, then processed via the clearing banks for settlement of CGS delivery and funds payment through the CGSS and the CIFS respectively.

The CGSS implemented an interbank delivery-versus-payment (DVP) mechanism in April 2008. By linking the CIFS (See Fig. 1), settlements of interbank transactions of book-entry CGS (including issuance, buyback, and secondary market transactions) are effected on a

DVP basis, with securities delivered through the CGSS and funds transferred via the CIFS. The DVP mechanism ensures that the final transfer of the CGS occurs only if the final transfer of funds occurs. This helps eliminate principal risk, so that the seller would not take the risk of not being able to receive payments after the delivery of securities, and the buyer would not take the risk of failing to receive the securities after making the payment. Implementation of the DVP mechanism significantly enhances the safety and efficiency of clearing and settlement of domestic government securities.

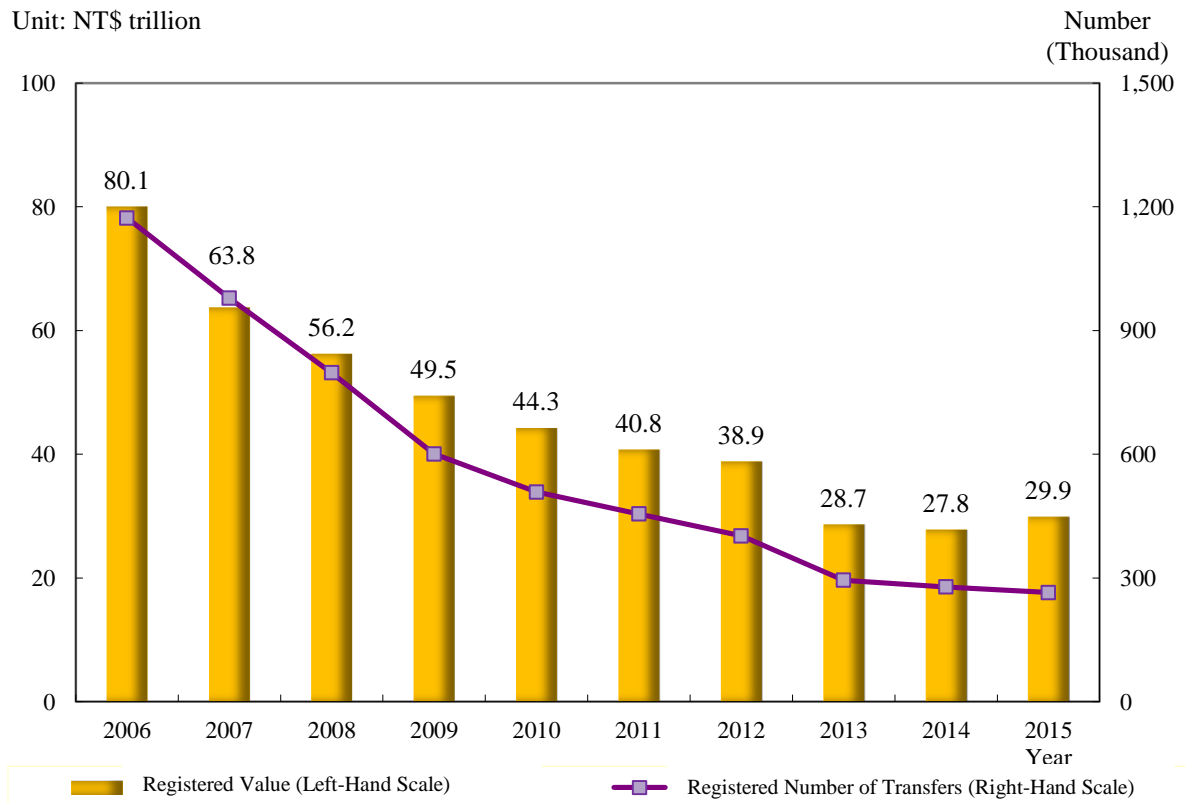
As of the end of December 2015, there were 16 clearing banks with 1,691 branches participating in the CGSS. For the year 2015, there were 19 book-entry central government bond issues totaling NT\$605.3 billion, and the principal and interest repaid for matured central government bonds amounted to NT\$580.6 billion. Meanwhile, there were 8 book-entry treasury bills issues totaling NT\$233.7 billion, and the principal and interest repaid for matured treasury bills amounted to NT\$273.7 billion. During 2015, 264,588 registered transfers with a total amount of NT\$29.9 trillion were processed by the CGSS (See Fig. 2).

**Figure 1 The Procedure for the Settlement of the Book-Entry CGS**



**Figure 2 The Operation of the CGSS**

Unit: NT\$ trillion



## **2. General organization of the FMI**

The CGSS is operated and managed by the CBC. As a banker to the government, the CBC has independent objectives and responsibilities of public policy. According to *The Central Bank of the Republic of China (Taiwan) Act (The CBC Act)*, the CBC's highest decision-making body is the Board of Directors, which comprises 11 to 15 directors in charge of the review and approval of policies concerning money, credit and foreign exchange. The top management consists of the governor and two deputy governors, whose duties are stipulated in Article 10 of *The CBC Act*. Administrative units include departments and offices, whose heads supervise businesses and execute Board decisions including the operation and management of the CGSS.

The objectives of the CBC clearly state a commitment to promoting the public good, including financial stability. The CBC has established a robust and appropriate integrated risk management system and control procedures, supervised by one of the deputy governors. An internal control unit conducts an internal audit of all businesses and operations at least annually to ensure the CGSS runs safely and efficiently. In the course of launching a new scheme or making improvements on CGS-related business, the CBC hosts meetings with relevant authorities, clearing banks and market participants to invite opinions and suggestions prior to any amendments to rules and regulations or adjustments to the CGSS functions. Such changes are also publicly disclosed on the CBC's official website.

## **3. Legal and regulatory framework**

In accordance with Article 37 of *the CBC Act*, Article 9 of the *Central Government Development Bonds and Loans Act*, and Article 11 of the *Treasury Bills and Short-Term Loans Act*, the CBC handles the issuance and repayments of principal and interests of central government

securities, issued domestically or abroad, and treasury bills, and established and operates the CGSS. Besides, based on the business that the CBC performed, the CBC stipulated the *Directions for the Operation of Book-Entry Central Government Securities*, which set forth various rules for registration institutions (including the Department of the Treasury and the Department of Banking of the CBC and clearing banks) to comply with. Relevant rules and regulations as well as an introduction to the CGSS are posted on the official website of the CBC, so that system participants can understand how the book-entry CGS-related business operates. Currently the clearing banks participating in the CGSS should sign up an agreement with the CBC to show their commitments to abide by the *Directions for the Operation of Book-Entry Central Government Securities*. This is highly legally bound and does not involve different jurisdictions. Participants or investors outside the jurisdiction engaged in the book-entry CGS business activities are subject to relevant procedures and regulations.

Risk management policy is in place and well defined. For risks that the CGSS may derive or undertake, the CBC stipulates relevant risk management policy and procedures to control potential incurred risks. In addition to regularly reviewing the risk management structure and performing updates in a timely manner, the CBC also makes associated recovery plans and operating procedures, and conducts regular exercises on backup operations every year. Through current risk management arrangements, the CBC has effectively controlled relevant risks.

#### **4. The design and operation of the CGSS**

The CGSS is a computer network linking the CBC and clearing banks with a two-tiered system of accounts. The CBC acts as an interbank online center, and conducts the issuance, buyback, transfer, and principal and interest payment of the book-entry CGS. Registration institutions are participants of the system and also the direct book-entry

CGS account holders. They shall open the book-entry CGS accounts with the Department of the Treasury and the funds accounts with the Department of Banking. Natural or legal persons who shall open the book-entry CGS accounts and demand deposit accounts with clearing banks for transfers and settlements are indirect book-entry CGS account holders.

The CGSS conducts the book-entry transfers of interbank CGS transactions on a DVP basis. On the settlement date, clearing banks of both parties transmit messages to the CGSS. When the transaction messages are matched and confirmed, the underlying book-entry CGS are earmarked and the messages are sent to the CIFS for funds settlement. Once the settlement of the transactions is done successfully, the CGSS conducts book-entry CGS transfers between the clearing banks of both parties and sends the results to them. If clearing banks' disposable balances in the book-entry CGS accounts are insufficient for settlement, the CGSS will reject the messages. The CBC provides intraday overdraft facility to participants who do not have sufficient funds to cover DVP transactions. If the balances are still insufficient after intraday overdrafts are provided, the payment instructions will be queued by the CIFS and shall not be revoked until cutoff time.



### III. A Brief Assessment of Observance of the *PFMI* for the SSS

#### **Principle 1: Legal basis**

An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.

#### **Description**

The operations of the CGSS are conducted domestically and are thus governed only by the relevant laws or regulations of the R.O.C. (Taiwan). The important business activities and services related to issuance, buyback, transfer, and principal and interest payment of the book-entry CGS are stipulated in the *Directions for the Operation of Book-Entry Central Government Securities* and certain relevant regulations, which provide a clear, transparent, and enforceable legal basis.

#### **Principle 2: Governance**

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.

#### **Description**

The CBC, whose governance structure is set out in *The CBC Act*, operates the CGSS and has an independent internal audit system to ensure its safety and efficiency. In the course of planning to launch a new scheme or make improvements on CGS-related businesses, the CBC hosts meetings with relevant authorities, clearing banks and market participants to gather opinions and suggestions while taking into account of the interests of the general public and the stakeholders prior to any amendments to rules and regulations or any adjustments to the CGSS functions. Relevant information will be timely published on the CBC's website as a reference for clearing banks and the general public.

**Principle 3: Framework for the comprehensive management of risks**

An FMI should have a sound risk-management framework for comprehensively managing legal, credit, liquidity, operational, and other risks.

**Description**

The risk management policy for the CGSS is included in the CBC's comprehensive risk management policy and is clearly stated in the CBC's *Risk Management Report* and *Internal Control System*. The CBC reviews annually and timely updates relevant risk management regulations and operating procedures. The CBC also formulates its business continuity plan and conducts regular exercises on backup operations.

**Principle 4: Credit risk**

An FMI should effectively measure, monitor, and manage its credit exposures 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. In addition, a CCP that is involved in activities with a more-complex risk profile or that is systemically important in multiple jurisdictions should maintain additional financial resources sufficient to cover a wide range of potential stress scenarios that should include, but not be limited to, the default of the two participants and their affiliates that would potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions. All other CCPs should maintain additional financial resources sufficient to cover 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 potentially cause the largest aggregate credit exposure to the CCP in extreme but plausible market conditions.

**Description**

The CGSS adopts an RTGS mechanism. If clearing banks' disposable balances in the book-entry CGS accounts are insufficient for settlement, the CGSS will reject the messages. The CBC provides intraday overdraft facility to the participants who do not have sufficient funds to cover interbank DVP transactions. If the balances are still insufficient after intraday overdrafts are provided, the payment instructions will be queued by the CIFS and shall not be revoked until cutoff time. Since the CGSS is designed against the risks arising from credit exposures to participants and the CBC will not incur losses in the event of a system participant's settlement failure, this principle is not applicable.

**Principle 5: Collateral**

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.

**Description**

The CGSS adopts an RTGS mechanism. If clearing banks' disposable balances in the book-entry CGS accounts are insufficient for settlement, the CGSS will reject the messages. The CBC provides intraday overdraft facility to the participants who do not have sufficient funds to cover DVP transactions. If the balances are still insufficient after intraday overdrafts are provided, the payment instructions will be queued by the CIFS and shall not be revoked until cutoff time. Since the CBC does not require collaterals to secure the settlement process, this principle is not applicable.

**Principle 6: Margin**

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.

**Description**

This principle is not relevant to the SSS. No assessments are required.

**Principle 7: Liquidity risk**

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.

<b>Description</b>	The CGSS adopts an RTGS mechanism. If clearing banks' disposable balances in the book-entry CGS accounts are insufficient for settlement, the CGSS will reject the messages. The CBC provides intraday overdraft facility to the participants who do not have sufficient funds to cover DVP transactions. If the balances are still insufficient after intraday overdrafts are provided, the payment instructions will be queued by the CIFS and shall not be revoked until cutoff time. Since the CBC does not bear liquidity risks arising from system participants, this principle is not applicable.
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**Principle 8: Settlement finality**

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>Description</b>	The CGSS adopts an RTGS mechanism to process book-entry CGS transfers, and effects settlements of interbank CGS transactions on a DVP basis. Once settled, these transfers are final and irrevocable.
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**Principle 9: Money settlements**

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.

**Description**

The CGSS adopts an RTGS mechanism, and is developed and operated by the CBC. Funds settlements of interbank CGS transfers are conducted by the CIFS and are in central bank money. The CBC manages the credit and liquidity risk effectively.

**Principle 10: Physical deliveries**

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.

**Description**

Since the CGSS conducts the settlement of book-entry CGS, this principle is not applicable.

**Principle 11: Central securities depositories**

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.

**Description**

This principle is not relevant to the SSS. No assessments are required.

**Principle 12: Exchange-of-value settlement systems**

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.

<b>Description</b>	The CGSS adopts an RTGS mechanism where transactions are finally settled and irrevocable. It connects the CIFS and adopts a DVP mechanism for interbank book-entry CGS settlement to ensure that the final transfer of the CGS occurs only if the final transfer of funds occurs, and this helps eliminate principal risk.
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**Principle 13: Participant-default rules and procedures**

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.

<b>Description</b>	The CGSS adopts an RTGS mechanism. If clearing banks' disposable balances in the book-entry CGS accounts are insufficient for settlement, the CGSS will reject the messages. The CBC provides intraday overdraft facility to the participants who do not have sufficient funds to cover DVP transactions. If the balances are still insufficient after intraday overdrafts are provided, the payment instructions will be queued by the CIFS and shall not be revoked until cutoff time. Since the CGSS is not exposed to the default risk of its participants, this principle is not applicable.
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<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>Description</b>	This principle is not relevant to the SSS. No assessments are required.

<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 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>Description</b>	As a banker to the government, the CBC establishes a robust management system on operational and financial aspects of its business activities. The CBC also formulates the internal control system and relevant regulations for the CGSS operations to identify, monitor, and manage the general business risk.

<b>Principle 16: Custody and investment risks</b>	
An FMI should safeguard its own and its participants' assets and minimize 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.	
<b>Description</b>	The CBC has sound and effective supervision mechanism as well as internal control system to safeguard the CGSS participants' assets.



**Principle 17: Operational risk**

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.

**Description**

The CBC manages operational risks of the CGSS, according to the *Directions for the Operation of Book-Entry Central Government Securities* and the *Rules Governing Central Bank Information Affairs*. The CBC also performs risk assessments, defines bearable risk tolerance levels, and formulates proper risk management plans for the CGSS. In addition, the CBC provides a training program for the personnel in charge of the book-entry CGS business annually, and performs random inspections on clearing banks about the book-entry CGS business along with the Ministry of Finance. The CBC has set up a business continuity plan for the CGSS and conducts regular exercises on backup operations. Proactive procedures to avoid possible cyber attacks are also in place to ensure the system has emergency responses and recovery capabilities.

<b>Principle 18: Access and participation requirements</b>	
An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.	
<b>Description</b>	Criteria and qualification requirements for the CGSS participants (referring to clearing banks) and relevant security control mechanisms are prescribed in the <i>Directions for the Operation of Book-Entry Central Government Securities</i> which permit fair and open access for participation. Relevant criteria and qualification requirements for system participation have been publicly disclosed.

<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>Description</b>	The CGSS adopts a two-tiered account system. The clearing banks, being participants of the system and the direct book-entry CGS account holders, are responsible for the final settlement. Natural or legal persons (including bond dealers) who shall open the book-entry CGS accounts and demand deposit accounts with clearing banks for transfers and settlements are indirect book-entry CGS account holders. There are no tiered participation arrangements as contractual relationships only exist with direct participants, i.e. clearing banks, and thus no material risks will arise from tiered participation mechanism.

<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>Description</b>	The CGSS establishes connections with the TPEx only for exchanging government bonds information. The link presents no risks to the CGSS, and thus there is no need to set credit limits.

<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>Description</b>	The design and operation of the CGSS meet the requirement for efficiency and effectiveness of the participants and the markets it serves. The CBC periodically reviews the system operations and sets various indicators to assess the performance of the system's security and services. Monthly analysis reports are submitted to managers as a reference of risk decision-making.

<b>Principle 22: Communication procedures and standards</b>	
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.	
<b>Description</b>	The TCP/IP protocols adopted by the CGSS are in line with international message standards for connections between the CBC and clearing banks. Standard operating procedures for the communication are in place for clearing banks to follow through when establishing or altering connections with the CBC.

**Principle 23: Disclosure of rules, key procedures, and market data**

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.

<b>Description</b>	The CGSS has clear and comprehensive rules stipulating operating procedures and fee schedules for participants (referring to clearing banks) to carry out the book-entry CGS operation. All relevant rules and operating conditions are publicly disclosed on the CBC's website.
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**Principle 24: Disclosure of market data by trade repositories**

A TR should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

<b>Description</b>	This principle is not relevant to the SSS. No assessments are required.
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## **IV. List of Publicly Available Resources**

### **1. Laws and regulations**

- (1) *The Central Bank of the Republic of China (Taiwan) Act*
- (2) *Central Government Development Bonds and Loans Act*
- (3) *Treasury Bills and Short-Term Loans Act*
- (4) *Directions for the Operation of Book-Entry Central Government Securities*

### **2. Publications**

- (1) *Annual Report, Central Bank of the Republic of China (Taiwan)*
- (2) *Financial Stability Report, Republic of China (Taiwan)*
- (3) *Disclosure Report on the Assessment of Compliance on the CPMI-IOSCO Principles for Financial Market Infrastructures*
- (4) *Payment and Settlement Systems of the Republic of China (Taiwan) (Chinese version)*