



# SINGAPORE

## REPORT ON THE OBSERVANCE OF STANDARDS AND CODES

November 2013

This Report on Observance of Standards and Codes on Singapore was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on October 24, 2013. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Singapore or the Executive Board of the IMF.

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# SINGAPORE

## FINANCIAL SYSTEM STABILITY ASSESSMENT— BACKGROUND MATERIAL

October 24, 2013

### REPORTS ON OBSERVANCE OF STANDARDS AND CODES

Prepared By  
**Monetary and Capital  
Markets Department**

These reports are background documents to the Financial System Stability Assessment report, and were prepared in the context of the work of the Financial Sector Assessment Program (FSAP) mission that visited Singapore in May 15–22, and July 25–August 7, 2013. The Article IV consultation mission took place June 26–July 8, 2013.

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## GLOSSARY

ACRA	Accounting and Corporate Regulatory Authority
AGC	Attorney General’s Chambers
AGM	Annual general meeting
AML/CFT	Anti-Money Laundering and Combating the Financing of Terrorism
ASC	Accounting Standards Council
CAD	Commercial Affairs Department
CCP	Central counterparty
CDP	Central Depository (Pte) Limited
CEO	Chief executive officer
CFD	Contracts for difference
CFTC	Commodity Futures Trading Commission
CIS	Collective investment scheme
CLS	Continuous Linked Settlement
CME	Chicago Mercantile Exchange
CMG	Capital Markets Group
COSMOS	Collateral Submission Management and Optimization System
CPSS	Committee on Payment and Settlement Systems
CRA	Credit rating agency
CSD	Central securities depository
DVP	Delivery versus payment
ERC	Enterprise risk committee
ERM	Enterprise risk management
ESMA	European Securities and Market Authority
EU	European Union
FAA	Financial Advisers Act
FATF	Financial Action Task Force
FMI	Financial market infrastructure
FSAP	Financial Sector Assessment Program
ICPs	Insurance Core Principles
IOSCO	International Organization of Securities Commissions
IPO	Initial public offering
MAS	Monetary Authority of Singapore
MAS Act	Monetary Authority of Singapore Act
MEPS	MAS Electronic Payment System
MEPS+	New MAS Electronic Payment System

MoF	Ministry of Finance
MoU	Memorandum of Understanding
MMoU	IOSCO Multilateral Memorandum of Understanding
OTC	Over-the-counter
OTCF	Over-the-counter financial products
PFMIs	CPSS-IOSCO Principles for Financial Market Infrastructures
RMOs	Recognized Market Operators
ROSC	Report on the Observance of Standards and Codes
SDIC	Singapore Deposit Insurance Corporation
SEC	Securities and Exchange Commission
SFA	Securities and Futures Act
SGS	Singapore Government Securities
SGX	Singapore Exchange Limited
SGX-DC	Singapore Exchange Derivatives Clearing Limited
SGX-DT	Singapore Exchange Derivatives Trading Limited
SGX-ST	Singapore Exchange Securities Trading Limited
SIAS	Securities Investors Association of Singapore
SROs	Self-regulatory organizations
SSS	Securities settlement system

# BASEL CORE PRINCIPLES FOR EFFECTIVE BANKING SUPERVISION

## A. Introduction

**1. The Monetary Authority of Singapore (MAS) shows a very high level of compliance with the Basel Core Principles and demonstrates a strong commitment by MAS to their implementation.** MAS' current institutional reliability and its commitment to a prudent and sound domestic financial system have contributed to the strong economic development of Singapore and its role as one of the leading financial centers in the world. MAS has built a strong and experienced supervisory staff that has put in place an effective supervisory and regulatory framework that includes active and constructive engagement with the management and boards of financial institutions under MAS supervision. To a large degree, this is a consequence of the strong support of the current Singaporean government for an effective and well-resourced MAS. That said, a high degree of compliance with the core principles is not a guarantee (nor should it be) against the failure of banks. Banking supervision is intended to minimize the likelihood of bank failures, and to deal swiftly and effectively with troubled institutions to minimize the cost of any failures and to preserve financial stability.

**2. As a large financial center, MAS is well aware of the risks posed by a financial system that is significantly larger than the economy of Singapore, and comprised primarily of branches of foreign institutions operating in non-Singapore dollars.** Moreover, the local retail market is concentrated in essentially three locally-owned banking groups, a subsidiary of a foreign global bank, and nine foreign bank branches holding Qualifying Full Bank privileges.<sup>1</sup> While having a limited number of large retail banks facilitates MAS supervisors staying on top of the operations and risk profiles of these institutions, it also means that several of these institutions, including all of the locally incorporated banks, are systemically important to Singapore.

**3. MAS has also set a high standard for approving foreign entrants, applying the same prudential framework to foreign branches as to its own locally incorporated banks.** In lieu of capital requirements, it has imposed risk-based requirements that set minimum cash balance, minimum liquid asset, and asset maintenance ratios that foreign branches must maintain. It has established good working relationships with the home supervisors of the foreign branches and proactively engages with the management of the parent banks to ensure that they are aware of any risks or shortcomings that arise in the branches' operations and that they take responsibility for ensuring issues are resolved.

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<sup>1</sup> There are more than two dozen foreign full banks that can conduct the full range of banking businesses permitted under the Banking Act, including retail deposit-taking. Of these, about one third (including the foreign subsidiary) have been granted Qualifying Full Bank (QFB) privileges, which give them greater branching privileges than other foreign banks.

## B. Background Information and Methodology Used

**4. This assessment of the Basel Core Principles for Effective Banking Supervision (Core Principles) is part of the 2013 Financial Sector Assessment Program (FSAP) Update for Singapore.** The assessment was conducted during an IMF mission that visited Singapore from April 3 to 17, 2013.<sup>2</sup> Singapore is one of the first countries to be assessed under the updated Core Principles that were approved by the Basel Committee on Banking Supervision (BCBS) in September 2012. In revising the core principles to reflect the lessons from the recent financial sector crisis, the BCBS has sought to raise the bar for sound supervision and to update the principles on the basis of emerging supervisory best practices. New principles have been added along with new essential criteria for each principle that provide more detail and additional criteria that raise the bar even higher. Altogether, the revised core principles now contain 247 separate essential and additional criteria against which a supervisory agency may be assessed.

**5. The purpose of the exercise was to assess the effectiveness of Singapore’s banking supervisory systems and practices against the core principles.** A primary purpose is to identify those areas of supervision policy and practice that would benefit in relative terms from future attention by MAS. The revised core principles are dynamic in the sense that what meets the standards of best practices with respect to supervision and regulation continues to evolve along with changes in industry practices and with supervisory experience. The revised core principles intentionally raised the bar for bank supervisors, particularly for those in a global financial center, such as Singapore. Given the evolving nature of the financial system and the difficulty that virtually all supervisors around the world experience keeping up with the emerging risks in the financial sector, it is expected that every country has areas of supervision and regulation that could be enhanced and made more effective.

**6. The expectations applied in evaluating Singapore’s compliance with the Basel Core Principles were high.** Singapore is a significant global financial center that is growing in importance. Supervisory practices should be commensurate with the important role that Singapore plays in the region and the risk profile and systemic importance of the banks operating in Singapore.

**7. Precise comparisons of this assessment against previous assessments of Singapore or with other countries are not meaningful.** Since the last core principles assessment of Singapore, which was completed in 2004, the standards have been revised twice—once in 2006 and again in 2012. Moreover, the challenge facing supervisors varies based on the level of development of the financial system, its structure and complexity, macroeconomic conditions, etc. In recognition of differences among countries, the revised core principles introduced the concept of proportionality “both in terms of the expectations on supervisors ... and in terms of the standards that supervisors impose on banks.” The result is that an assessment of one jurisdiction is not directly comparable to that of another, even if against the same set of core principles. Hence, comparisons between this

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<sup>2</sup> The assessment team comprised Jonathan Fiechter and Antonio Pancorbo.



assessment and the earlier assessment of Singapore or going forward, between this assessment and assessments of other jurisdictions with similar financial systems and structures under the revised core principles, would be indicative at best.

**8. The assessment of compliance with each principle is made on a qualitative basis.** To assess compliance, the methodology proposes a set of essential and additional assessment criteria for each principle. Because of the important role of Singapore in the global financial system, MAS agreed to be assessed on both the essential and additional criteria. The assessment of MAS against the core principles is not, nor is it intended to be, an exact science. Assessors are expected to use their judgment in reviewing the quality of supervision and regulation and avoid a box-ticking exercise. The assessment allows assessor judgment on the extent to which MAS supervision and regulation, when applied against the unique characteristics of Singapore, fully meet the intended objectives of the core principles.

**9. The assessment is based on the review of the framework of laws, rules, policies, and practices in place at the time of the assessment, and extensive meetings with officials of MAS, the industry, and third parties.** The assessment does not reflect planned initiatives aimed at adopting new or amending existing regulations and practices. The team examined the current practice of bank supervision of MAS and sought to assess the quality and effectiveness of supervisory practices, while not confining itself to an evaluation of the design of legislation and prudential rules.

**10. The team would like to acknowledge the very high quality of cooperation received from the authorities.** The team was given access to all of the requested information. In particular, the team extends its thanks to MAS staff who provided a very comprehensive, high-quality self-assessment, and who responded promptly and comprehensively during the mission to the extensive information requests by the team.

## C. Overview of the Institutional Setting and Market Structure

**11. Singapore is a major financial center with a combination of local and foreign financial institutions that in the aggregate hold assets representing seven times GDP in 2012.** The financial sector is dominated by the banking industry. The banking system is comprised of a small number of locally incorporated banks holding roughly one-third of the banking assets and a large number of foreign branches holding approximately two-thirds of the assets. There are currently three domestic commercial banking groups,<sup>3</sup> all of which are designated as full banks, along with one global foreign bank that operates as a subsidiary and has full banking privileges. The three domestic commercial banking groups all have significant operations in neighboring countries.

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<sup>3</sup> These banks are DBS Limited, United Overseas Bank (UOB) Limited, and Oversea-Chinese Banking Corporation (OCBC) Limited.

**12. The authorities are well aware of the risks associated with operating a major financial center and have taken several steps to mitigate this risk.** These actions include:

- placing significant emphasis on ensuring MAS has the capacity and resources to be a world-class supervisor;
- setting high prudential standards such as capital requirements that exceed minimum international standards, high liquidity requirements, requiring robust risk management and governance systems, and adopting a system of intensive and intrusive supervision;
- aiming to establish a balanced mix of domestic banks (local and foreign subsidiaries) and a diversified group of foreign branches that includes branches of some of the major global banks;
- limiting the granting of full banking licenses and privileges to accept retail deposits;
- treating foreign branches as similar to domestically incorporated banks for purposes of supervision and regulation;
- setting a relatively conservative deposit insurance limit of S\$50,000, which is equivalent to 196 percent of annual median income and covers 90 percent of all depositors.

Also, during the crisis, Singapore felt compelled to follow the actions of other countries in the region of putting in place 100 percent deposit guarantee (from October 2008 until year end-2010). Singapore minimized its fiscal exposure, however, by limiting its backstop of the guarantee to \$150 billion based on its assessment of the possible liabilities arising from any failures.

**13. MAS plays a central role in the institutional design of the financial system in Singapore.** As described in more detail below, MAS acts as central bank, manages the official foreign reserves, is the integrated supervisor for the financial sector, is the resolution authority for financial institution, is the macroprudential authority, assesses and triggers payouts from the deposit insurance system, and has a mandate to develop Singapore as an international financial center.

**14. To discharge its mission, MAS regulates and supervises all financial intermediation, including banking, insurance, and securities activities.** MAS has a tradition of adopting conservative prudential guidelines for capitalization, liquidity, and operations management. It has adopted a risk-based supervisory framework, with supervisory intensity depending on the systemic importance of a financial institution and its assessed riskiness. The macroeconomic surveillance and supervisory functions in MAS are coordinated to identify and address the impact of developments in the macroeconomic environment on individual banks. The Financial Action Task Force (FATF) rated MAS highly on most of the anti-money laundering recommendations that are relevant as banking supervisor.

**15. The multiple roles assigned to MAS are both a strength and a vulnerability.** A benefit of placing so many responsibilities within MAS is that coordination, communication, and collaboration

among the various functions are much more seamless and timely than in countries where these functions are placed in separate entities. On the other hand, such a bunching of responsibilities removes the advantage of a second pair of eyes. Moreover, combining responsibilities for prudential supervision and development of Singapore as an international financial center holds the potential, under different leadership, of creating situations in which MAS is forced to choose between prudential measures and making Singapore an attractive location for foreign operations. The team found no instances in which prudential supervision was sacrificed in order to meet developmental needs. In fact, Singapore has adopted a development strategy that emphasizes the strong and conservative approach to supervision practiced by MAS, which reflects well on the banks permitted to operate there. The dual mandate, however, does create the future risk that under a different government, developmental objectives may be prioritized over prudential supervision.

**16. Two key features of Singapore’s banking sector are the prevalence of the “branch” model under which most foreign banks operate and allowing banks to own insurance companies and securities firms/broker dealers.** While the prevalence of foreign branches, most of which are reported to fund themselves outside of Singapore, helps limit the risk to Singapore, it has also put more of a supervisory burden on MAS given the absence or reduced effectiveness of some regulatory tools (e.g., capital and liquidity requirements) and supervisory instruments (e.g., direct supervision of the head office and effective resolution tools) that can be applied to the branch of a foreign bank. Partially in response to this concern, MAS has announced that it will require foreign branches with significant retail operations in Singapore to locally incorporate their retail operations (i.e., to convert to subsidiaries). Singapore has adopted a universal banking model for banks that allows them to own insurance companies and securities firms. While this provides a more diversified source of income, it also raises the overall complexity of managing and supervising the banking groups.

## D. Preconditions for Effective Banking Supervision

**17. The assessment of preconditions is beyond the scope of the assessments itself; however, a factual review facilitates an understanding of the environment in which the banking system and the supervisory framework operate.** This section discusses the following preconditions: sound and sustainable macroeconomic policies; a well established framework for financial stability policy formulation; a clear framework for crisis management, recovery and resolution; an appropriate level of systemic protection (or public safety net) while maintaining effective market discipline, and a well-developed public infrastructure.

**18. Amid the current low interest rate environment and abundant global liquidity, macroprudential tools are deployed to address credit and inflation risks in specific asset markets.** Over the past decade (2003–12), GDP growth and CPI inflation averaged 6.1 percent and 2.6 percent, respectively. The exchange rate-centered monetary policy framework has been effective in terms of price stability and anchoring inflation expectations in the economy. The government adheres to the principle of fiscal prudence, and aims to run a balanced budget over the business cycle. The focus of the budget is on achieving longer-term structural and social goals, such as enhancing productivity growth and building a fair and inclusive society.

**19. MAS is the macroprudential authority in Singapore.** A Managing Director, who is accountable to the Board of MAS, runs the day-to-day operations of MAS. The Chairman of MAS presides over a Board-level Chairman’s Meeting, which is vested with duties for both microprudential and macroprudential policies. The Chairman’s Meeting, in its macroprudential policy role, is supported by MAS Management Financial Stability Committee, which is chaired by the Managing Director of MAS and comprises MAS senior management. The ongoing institution-specific monitoring by MAS’ financial supervision departments complements the top-down surveillance efforts to identify the risks and vulnerabilities of individual institutions and the financial system as a whole. To discuss emerging macroeconomic and financial stability issues and to collaborate on crisis management preparations, MAS holds meetings with the MoF. The current Chairman of MAS is also a Deputy Prime Minister and the Minister for Finance.

**20. MAS is the resolution authority for financial institutions in Singapore.** The resolution strategies available under the Banking Act include winding up, taking operational control, transfer or disposition of business, transfer of shares, restructuring of share capital, imposing of a moratorium, etc. Operationally, in the event that MAS departments detect that a crisis is developing in its area of responsibility, they should activate the internal Crisis Management Team by obtaining approval from the Managing Director of MAS. Simulation exercises are conducted at industry-wide levels. MAS holds meetings with the MoF to collaborate on crisis management preparations as needed and is presently working with supervisors in the region on a multilateral sharing arrangement on resolution planning information.

**21. The Singapore Deposit Insurance Corporation (SDIC) was established in 2006 to protect small depositors.** Its board of directors is accountable to the minister-in-charge of MAS. Membership is mandatory for retail deposit-taking institutions, i.e., full banks and finance companies. It insures the first S\$50,000 of Singapore dollar deposits placed by non-bank depositors in standard savings, current and fixed deposits accounts. This fully covers the deposits of close to 90 percent of retail depositors. The SDIC is pre-funded by contributions from members. MAS has also extended a contingency liquidity facility of up to S\$20 billion.

**22. Singapore enjoys well developed public infrastructures,** such as reliable accounting, auditing and legal professions, and payment, clearing and settlement systems. The legal system is based on English common law. Laws are strictly enforced and punishments are often severe. The World Economic Forum Global Competitiveness Report 2011-2012,<sup>4</sup> which surveyed 144 countries, has ranked Singapore highly on a wide range of different institutional aspects, such as the efficiency of the legal framework in determining disputes (1st), property rights (3rd), and judicial independence (20th).

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<sup>4</sup> See: [http://www3.weforum.org/docs/WEF\\_GCR\\_Report\\_2011-12.pdf](http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf).

## E. Main Findings

### Responsibilities, objectives, powers, independence, accountability, and cooperation (CPs 1–3)

**23. The dual mandate of MAS, both to develop Singapore as a financial center and to act as the prudential supervisor of the financial industry raises the potential for safety and soundness to be compromised** in an effort to make Singapore a business-friendly center that is attractive to foreign banks. The team found no evidence of an intentional lowering of prudential standards to attract more foreign business. In fact, the nature of the developmental work presently carried out by MAS, and public statements from senior officials, do not appear to be in conflict with MAS' prudential mandate. Nonetheless, the inherent risk, as demonstrated in other financial centers, of vesting supervisory agencies with a dual mandate, remains. Under different leadership, the dual mandate could result in prudential standards being weakened in an effort to attract additional foreign institutions. The potential for these two mandates to conflict in favor of the developmental objective does not raise serious concerns at the time of the assessment. Nevertheless, this is an area that needs to be monitored.

**24. Because of the importance of the financial sector to Singapore, MAS is vested with significant supervisory authority and has the full backing of the government for access to adequate resources.** MAS has control over its budget, it has extensive staff training programs, staff compensation is very competitive, and MAS has been able to attract strong technical experts on to its staff. The number of supervisory staff has been steadily increasing over the past five years, although as noted under Principle 17, despite the hard work and dedication of MAS staff, additional staff is likely to be needed. Turnover remains relatively low, in part reflecting the attitude that a career in MAS, particularly in supervision, is desirable. Staff is provided legal protection for actions taken in the course of carrying out their official responsibilities and legal aid is provided if required.

**25. The governance structure of MAS, however, raises the potential for political influence in the operations of MAS.** While the mission neither observed nor was informed of any instances of inappropriate interference in the banking supervisory operations of MAS, having a Board at the top of MAS, of which four out of nine Board members including the chairman and deputy chairman are government ministers and another member is a permanent secretary at the MoF, raises the risk that under different leadership, the supervision of the financial system by MAS could be subject to undue governmental influence. As an example, the Chairman's Meeting, which is comprised entirely of government ministers and the Managing Director of MAS, decides on major changes to the regulatory framework and supervisory policies of MAS. The Meeting also approves major changes to policies and strategies relating to financial center development. The result of this process to date has been positive—MAS has adopted supervisory policies that are more conservative than suggested by international guidelines. But, again, this Committee, under different leadership, has the potential for shifting gears and inappropriately interfering in regulatory and supervisory policy setting by MAS and/or a shift in emphasis towards development objectives.

**26. This deficiency does not raise serious concerns at the moment of the assessment.** MAS has gained a reputation as a very conservative supervisor and has been an early adopter of capital, liquidity, and governance standards that exceed global standards. While it is always possible that a new government may adopt a different posture, the current government appears to have fully recognized the benefits to Singapore, as a financial center, in maintaining its reputation as a supervisor with very high prudential and licensing standards.

**27. A key advantage to MAS as an integrated supervisor, as well as resolution authority, macro-prudential authority and central bank is the seamless coordination and information sharing among the different functions.** The senior MAS officers have also established very good working relationships with the relevant home supervisors, in part as a consequence of MAS being viewed as a strong and trustworthy supervisor, which is actively involved with the various standard setters and the FSB. The one caution the team would offer, is that putting all of the functions under one organization runs the risk of reducing the opportunity for checks and balances and may not facilitate worthwhile debates of staff with different perspectives (e.g., increases the risk of “groupthink”).

#### **Ownership, licensing and structure (CPs 4–7)**

**28. MAS is very focused on maintaining the very solid reputation and credibility of the banking sector in Singapore.** MAS has set a very high standard for granting banking licenses, particularly those authorized to gather insured retail deposits. While MAS practice has been to informally dissuade unqualified or unsuitable applicants from submitting a license application in lieu of receiving a rejection, a more transparent process of occasionally rejecting applications might be a way of sending a strong signal to the market regarding the high hurdle rate for entry into the Singapore market.

#### **Methods of ongoing banking supervision (CPs 8–10)**

**29. MAS has in place an effective approach to banking supervision that is intrusive, intensive, and seeks to identify and address potential risks.** MAS makes effective use of moral suasion and soft powers to address prudential concerns. MAS developed in 2005 a risk-based methodology (known as CRAFT). It is currently the centerpiece of MAS’ supervisory approach and guides its on- and offsite work. A salient attribute of MAS’ approach is its proximity to supervised banks. MAS has also a framework in place for early intervention, which should be considered in conjunction with CP11, on corrective and sanctioning powers.

**30. MAS uses a wide range of tools and techniques in its risk-based supervision.** All banks are subject to a base-level of offsite supervision and onsite inspection. The supervisory intensity is stepped up for more systemically-important or riskier banks, according to MAS’ risk-based methodology. Banks’ policies and practices are subjected to close continuous offsite monitoring, which is supplemented by periodic onsite inspections. MAS uses primarily its own staff to conduct supervisory tasks. However, in certain situations, MAS may require a bank to obtain a report from an

external expert assessing or verifying compliance with certain requirements to correct a weakness in the bank's operations or policies.

**31. The supervisory process is structured around operational “divisions” to perform the functions of offsite and onsite supervision.** The supervisory process is complemented with risk specialists who support the work of the operational divisions. This structure provides continuous monitoring and updated knowledge of each institution and banking group. It also facilitates regular and informed dialogues with banks' management, making clear to banks the MAS officers responsible at each step of the supervisory process. MAS' supervisory practices adhere to the notion that effective onsite work should be based on first-hand experience gained through MAS independent verification (whether conducted by MAS supervisors or through external experts hired by the banks and approved by the supervisors). Accordingly, MAS is well positioned to gain a sound knowledge of banks' valuation of exposures and liabilities, risks and processes. Analysis of the bank's financial position, on and off-balance sheet, and profit and losses by supervisors is a vital activity for determining the risk profile of each institution.

**32. Banks routinely furnish information that MAS requires to carry out its supervisory functions.** Some of this information may be provided as frequently as daily. Supervisors review these returns and other information submitted to assess banks' financial soundness and compliance with relevant laws and regulations. To improve data quality while easing the burden on banks, MAS has developed “MASNET” and “EPIC,” which facilitate the submission of information by electronic means. The practice of submitting internal management information to MAS is also a common avenue for banks' supervisory reporting.

### **Corrective and sanctioning powers of supervisors (CP 11)**

**33. MAS has the full range of traditional supervisory powers to address unsafe and unsound practices or activities for application to locally incorporated banks.** Governance arrangements at the branch level, however, are different than for incorporated banks and some of the supervisory instruments such as higher capital requirements are not available. This poses a challenge for Singapore given the importance of foreign branches, which hold significantly more assets than domestically incorporated banks. MAS has sought to offset these disadvantages by imposing high asset maintenance and liquidity requirements on weak foreign branches and by working with the head office and home supervisor of the foreign branch when it has supervisory concerns. MAS states that for serious issues, this approach will often result in an inspection team being sent to the branch by the home supervisor and/or the home office taking action including replacing weak staff in the branch.

**34. MAS has the power to require a bank or foreign branch to cease certain business activities and may impose higher prudential reserves requirements.** It can replace officers and senior management and appoint a “statutory advisor or manager” either to oversee the management of the bank or be put in charge of running the bank. The mission has not identified any barriers to MAS taking resolution actions vis-à-vis branches although any such actions are always more difficult given the possible impact of such actions on the foreign parent and its home



jurisdiction. Because MAS is an integrated supervisor within the central bank, supervisory communications across the financial sectors are seamless.

**35. MAS' approach is often to try moral suasion to effect change when an issue arises that is not a clear violation of a law or regulation and when there are no safety and soundness issues.** While this approach of raising concerns with management and the board usually achieves the desired outcome in an efficient manner, such an approach might sometimes have the disadvantage of not sending clear signals to the industry of MAS disapproval of certain practices. Where a bank has not complied with the relevant laws and regulations, however, or is engaged in unsafe or unsound practices, MAS will take enforcement actions ranging from warnings, reprimands and fines to the imposition of supervisory conditions and license suspensions or revocations. MAS may revoke or suspend licenses on its own, with ex-post judicial review. MAS staff operate under an immunity clause that protects them from legal suit so long as they are operating in accordance with their official mandate.

### **Consolidated and cross-border banking supervision (CPs 12–13)**

**36. MAS supervises each banking group on a consolidated basis.** It undertakes intensive supervision and performs risk assessments of each bank on a standalone and consolidated basis. It also monitors intra-group and related party transactions. It requires the management and board of the parent bank to monitor and exercise effective oversight of the bank's foreign operations. MAS examines major foreign branches and subsidiaries of locally incorporated banks on average once every three years and conducts supervisory visits and meetings at least annually. It regularly engages with host supervisors responsible for the supervision of the foreign operations of locally incorporated banks and has established bilateral supervisory relationships with several host supervisors that enable the mutual exchange of information. This in turn facilitates consolidated supervision. Moreover, because responsibility for the supervision and regulation of the insurance, and securities sectors is organized under MAS, there is a seamless exchange of information regarding the non-bank activities of the banking group.

**37. MAS shares information with home and host supervisors of cross-border banking groups and applies the same regulatory and supervisory standards to the local operations of foreign banks that it applies to locally incorporated banks.** Through its active involvement on the Basel Committee, regional supervisory groups, supervisory colleges and crisis management groups, it has established itself internationally as a strong and credible supervisor, which in turn, has fostered constructive engagements with foreign supervisors. It is in regular communication with foreign supervisors and routinely shares its examination reports with the home supervisors of foreign banks operating in Singapore and in turn, receives inspection reports from host supervisors regarding the foreign operations of Singapore banks. It is presently working with supervisors in the region on a multilateral sharing arrangement on resolution planning information. MAS has required all systemically important banks in Singapore, including foreign branches, to prepare and submit recovery plans, and to provide information relevant to the preparation of resolution plans.



**Prudential requirements, regulatory framework, accounting and disclosure (CPs 14–29)**

**38. MAS encourages banks to adopt strong risk management systems that are commensurate with their risks.** Strict limits are applied to the retail activities of the numerous foreign branches operating in Singapore. A number of these branches serve as the regional hubs for the parent bank for the risk management and internal audit functions, which provides greater assurances regarding the quality of risk management in these local branches. MAS has traditionally established capital regimes that equal or exceed the minimum standards adopted on a global basis. While the higher capital requirements imposed by MAS may in some respects have put locally incorporated banks at an apparent competitive disadvantage vis-à-vis more leveraged foreign competitors, Singapore has chosen, as a financial center, to adopt a very conservative approach to regulation.

**39. MAS is fully aware of the vulnerabilities that current developments on credit risk entail for the financial system.** MAS also carefully monitors credit developments in Singapore. Since 2009, the Authorities have implemented a series of “cooling” measures to rein in the credit expansion. However, it is not yet clear whether MAS actions have been effective in achieving the desired outcomes.

**40. The mission recommends that MAS increase its attention to onsite inspections of credit risk.** The philosophy of MAS is to place significant emphasis on holding bank management accountable for the quality of underwriting and credit quality, and on its on- and offsite reviews of the bank’s adequacy of its credit risk management systems and processes. During inspections, supervisors assess whether banks have established and adhered to adequate policies and processes for evaluating the quality of assets and the adequacy of loan loss provisions and reserves. MAS’ assessment of the quality of banks’ own credit risk systems might benefit from greater first-hand knowledge by MAS of banks’ credit exposure quality and the adequacy of loan loss provisioning for prudential purposes. Moreover, in view of the level of risk and current macroeconomic conditions, MAS should ensure that resources assigned to determine banks’ management of loan and investment portfolios are commensurate with the level and impact of credit risk.

**41. MAS has a dedicated team of market risk specialists who support the bank supervisors in their work.** These specialists are involved in inspections and focus on raising market risk management standards across banks. During inspections, supervisors conduct walkthroughs of the systems and controls to satisfy themselves about the integrity of banks’ market risk policies and processes.

**42. The nature of the foreign branch operations and the potential reliance on the home office for funding makes liquidity risk an area of vulnerability.** MAS carefully monitors liquidity risk in locally incorporated banks and foreign bank branches. MAS requires banks and branches to measure and monitor their liquidity positions in the major currencies and during inspections, and undertake analyses to ensure that the banks have effective processes in place. MAS is also responsible for the supervision of a number of foreign branches that may operate in foreign currencies (primarily in U.S. dollars). For locally-incorporated banks with branches and subsidiaries in

neighboring Asian countries, foreign assets are funded with locally raised deposits to eliminate the FX risk. Foreign branches have been required to reduce their liquidity risk through matched funding. For longer-dated assets, the branches have issued medium-term notes.

**Table 1. Singapore: Summary Assessment of the Basel Core Principles**

Core Principle	Comments
<b>1. Responsibilities, objectives and powers</b>	The responsibilities and objectives of MAS related to banking supervision are quite comprehensive and the underlying statutory framework provides the foundation that has enabled MAS to become a highly effective bank supervisor. The dual mandate of MAS, both to develop Singapore as a financial center and to act as the prudential supervisor of the financial industry raises the potential for safety and soundness to be compromised in an effort to make Singapore a business-friendly center that is attractive to foreign banks. Under different leadership, the dual mandate could in theory, result in prudential standards being weakened in an effort to attract additional foreign institutions. The potential for these two mandates to conflict in favor of the developmental objective does not raise serious concerns at the time of the assessment. Nevertheless, this is an area that needs to be monitored.
<b>2. Independence, accountability, resourcing and legal protection for supervisors</b>	The governance structure of MAS raises the potential for political influence in the operations of MAS. While the mission neither observed nor was informed of any instances of inappropriate interference in the banking supervisory operations of MAS, having a Board at the top of MAS, of which four out of nine Board members including the chairman and deputy chairman are government ministers and a fifth member is a permanent secretary of the MoF, raises the risk that under different leadership, the supervision of the financial system by MAS could be subject to undue governmental influence.
<b>3. Cooperation and collaboration</b>	MAS is an integrated supervisor, as well as resolution authority, macro-prudential authority, and central bank. MAS has good working relationships with the relevant home supervisors.
<b>4. Permissible activities</b>	MAS is very focused on maintaining the very solid reputation and credibility of the banking sector in Singapore, and fully meets the principle that any institutions offering banking services must be licensed by MAS and subject to bank supervision.
<b>5. Licensing criteria</b>	MAS has set a very high standard for granting banking licenses. While MAS practice has been to informally dissuade unqualified or unsuitable applicants from submitting a license application in lieu of receiving a rejection, a more transparent process of occasionally rejecting applications might be a way of sending a strong signal to the market regarding the high hurdle rate for entry into the Singapore market.
<b>6. Transfer of significant ownership</b>	The legal and supervisory framework is correct. At the time of the assessment, there have been very limited instances of transfer of significant ownership.
<b>7. Major acquisitions</b>	MAS exercises a high level of prudence regarding major acquisitions. Suitable acquisitions generally are limited to companies engaged in the business of banking or under the supervision of MAS.
<b>8. Supervisory approach</b>	MAS has in place a world-class and effective approach to banking supervision that is intrusive, intensive, and seeks to identify and address potential risks. MAS makes effective use of moral suasion and soft powers to address prudential concerns. MAS has also a framework in place for early intervention, which should be considered in conjunction with CP11, on corrective and sanctioning powers.

Core Principle	Comments
<b>9. Supervisory techniques and tools</b>	
	<p>MAS uses a wide range of tools and techniques in its risk-based supervision to monitor, analyze and review the safety and soundness of individual banks and the banking system. MAS uses primarily its own staff to conduct supervisory tasks. MAS is well positioned to gain sound knowledge of banks' valuation of exposures and liabilities, risks and processes.</p>
<b>10. Supervisory reporting</b>	
	<p>Banks routinely furnish information that MAS requires to carry out its supervisory functions. To improve data quality while easing the burden on banks, MAS has developed "MASNET" and "EPIC," which facilitate the submission of information by electronic means. The practice of submitting internal management information to MAS is also a common avenue for banks' supervisory reporting.</p>
<b>11. Corrective and sanctioning powers of supervisors</b>	
	<p>MAS has the full range of traditional supervisory and resolution powers for locally incorporated banks. While its powers are necessarily more limited for foreign bank branches, it has established a set of policies and requirements that have successfully reduced the risks to Singapore posed by the large presence of foreign branches.</p> <p>MAS is able to take corrective actions, including requiring a bank to cease activities and/or assuming control of the bank when MAS believes that a bank is carrying on its business in a manner likely to be detrimental to the interests of its depositors or its creditors or where MAS considers it in the public interest to do so.</p> <p>MAS may revoke or suspend licenses on its own, with ex-post judicial review. MAS staff operate under an immunity clause that protects them from legal suit so long as they are operating in accordance with their official mandate.</p>
<b>12. Consolidated supervision</b>	
	<p>MAS undertakes intensive supervision and performs risk assessments of each bank on a standalone and consolidated basis.</p>
<b>13. Home-host relationships</b>	
	<p>MAS shares information with home and host supervisors of cross-border banking groups and applies the same regulatory and supervisory standards to the local operations of foreign banks that it applies to locally incorporated banks. MAS is presently working with supervisors in the region on a multilateral sharing arrangement on resolution planning information.</p>
<b>14. Corporate governance</b>	
	<p>MAS fully meets the principle that banks and banking groups under its supervision have robust and effective corporate governance policies and processes.</p>
<b>15. Risk management process</b>	
	<p>MAS encourages banks to adopt strong risk management systems that are commensurate with their risks. MAS regularly asks for and reviews internally-generated risk management reports produced for management and the Board.</p>
<b>16. Capital adequacy</b>	
	<p>MAS has traditionally established capital regimes that equal or exceed the minimum standards adopted on a global basis. While the higher capital requirements imposed by MAS may have in some respects put locally incorporated banks at an apparent competitive disadvantage vis-à-vis more leveraged foreign competitors, Singapore has chosen, as a financial center, to adopt a very conservative approach to regulation.</p>

Core Principle	Comments
<b>17. Credit risk</b>	As in most banking systems, credit risk is the most relevant risk in the banking system in Singapore. MAS is fully aware of the vulnerabilities that current developments on credit risk entail for the financial system, and monitors them carefully. Also, MAS has developed an intensive and intrusive approach to risk-based supervision that provides flexibility to its supervisory actions. While the team fully endorses MAS' philosophy of viewing bank management, bank risk management systems, and prudent internal risk cultures, etc., as the first line of defense against weak loan and asset portfolios, it believes that even more attention to this area is warranted, given the high risks. Since 2009, the Authorities have implemented a series of "cooling" measures to rein in the credit expansion, slow the rise in housing prices, and reduce the risk associated with lending against real estate and autos. MAS has also imposed limits on banks' exposure to the property market. It is not yet clear, however, whether MAS actions have been effective in achieving the desired outcomes—full assessment has to be deferred to a future evaluation
<b>18. Problem assets, provisions, and reserves</b>	During inspections, supervisors assess whether banks have established and adhered to adequate policies and processes for evaluating the quality of assets and the adequacy of loan loss provisions and reserves. MAS also assesses whether banks regularly review and update these policies and practices.
<b>19. Concentration risk and large exposure limits</b>	MAS imposes relatively conservative limits on equity investments in a single company or investment fund, and on real estate holdings and property exposure. Excellent supervisory and regulatory initiatives may be tempered by the adoption by Singapore of the current relatively high international benchmark exposure limit of 25 percent of capital to any one counterparty and the local overall limit that large exposures in aggregate may not exceed 50 percent of total exposures; MAS has documented, however, that in fact, major banks and foreign branches have not made large loans that come near to these exposure limits.
<b>20. Transactions with related parties</b>	MAS' regulations and monitoring of a bank's transactions with related parties require banks to ensure that such transactions are conducted on an arm's length basis and that the relevant terms and conditions are not more favorable than transactions with non-related parties under similar circumstances.
<b>21. Country and transfer risks</b>	Country and transfer risk can be considered relevant risks for the locally incorporated banks in Singapore. MAS' requirements on country and transfer risk management are in place and assessed by supervisors during inspections or as part of a review of the bank's ICAAP. MAS has a dedicated team of credit risk specialists, who support the bank supervisors in their work.
<b>22. Market risk</b>	MAS has issued Market Risk Guidelines and market risk regulatory requirements in relation to regulatory capital. There is a dedicated team of market risk specialists who support the bank supervisors in their work
<b>23. Interest rate risk in the banking book</b>	MAS monitors that banks have adequate systems commensurate with their risk profile to manage and to control or mitigate interest rate risk.
<b>24. Liquidity risk</b>	MAS monitors liquidity risk in locally incorporated banks and foreign bank branches. MAS requires banks and branches to measure and monitor their liquidity positions in the major currencies. During inspections, it undertakes analyses to ensure that the banks have effective processes in place. The nature of the

Core Principle	Comments
	foreign branch operations and the potential reliance on the home office for funding makes liquidity risk an area of vulnerability. Foreign branches have been required to reduce their liquidity risk through matched funding. For longer-dated assets, the branches have issued medium-term notes.
<b>25. Operational risk</b>	
	MAS holds banks accountable for putting into place effective operational risk frameworks and practices that have the full support of management and are routinely monitored and assessed by the various audit functions and management.
<b>26. Internal control and audit</b>	
	MAS puts a high priority on ensuring that banks and foreign branches have effective and timely internal control functions that are independent of management and staffed with competent individuals with access to the required resources.
<b>27. Financial reporting and external audit</b>	
	MAS holds local banks' and foreign branches' management accountable for producing timely and accurate financial reports and holds banks' external auditors fully accountable for verifying that the process and reports produced by the banks comply with MAS requirements and Singapore Financial Reporting Standards, as modified by MAS Notice 612 for the recognition of loan loss provisioning; these are considered to be more conservative than the incurred loss measurement model under FRS 39. It successfully holds auditors to a high standard through its power to revoke an audit firm partner or entire firm's authorization to conduct further bank audits in Singapore.
<b>28. Disclosure and transparency</b>	
	The quarterly and annual disclosures by banks incorporated in Singapore and the reports periodically published by MAS fully meet the criteria of disclosure and transparency.
<b>29. Abuse of financial services</b>	
	MAS has established a strict regime to prevent, identify and report possible abuses of financial services such as suspicious acts of money laundering, terrorism financing and incidents of fraud. MAS assesses banks' compliance with these requirements through inspections and offsite reviews. On AML/CTF, MAS will be amending its notices and guidelines in line with the latest FATF standards.

## F. Recommended Actions

**43. Table 2 below lists the suggested actions for improving compliance with the Basel Core Principles and the effectiveness of regulatory and supervisory frameworks.** Recommendations are proposed on a prioritized basis.

**Table 2. Singapore: Recommended Actions to Improve Compliance with the Basel Core Principles**

Reference Principle	Recommended Action
<b>1. Responsibilities, objectives and powers</b>	<p>In the absence of shifting development out of MAS (and hence, removing it from MAS mandate), the authorities should consider ways to more clearly insulate the role of prudential supervision from the developmental mandate, by articulating that the developmental mandate of MAS is clearly subordinate to prudential supervision.</p> <p>The establishment of effective check and balances should also accompany such subordination to make it clear that in the event of a conflict between prudential supervision and steps to make Singapore more attractive to foreign financial firms, prudential supervision will always be the priority.</p>
<b>2. Independence, accountability, resourcing and legal protection for supervisors</b>	<p>The authorities should consider changing the composition of the board appointments, so that the majority of board members are independent of government (i.e., neither political appointments such as ministers nor senior members of government).</p> <p>The authorities should also consider establishing effective check and balances at the highest possible level of binding force to ensure MAS' ability and willingness to act, as a supervisory authority, and to guard against any bias for inaction or delay due to external pressures or inappropriate political objectives.</p>
<b>11. Corrective and sanctioning powers of supervisors</b>	<p>MAS should continue to work closely with the home supervisors of the major foreign branches to ensure it has access to current information on the risks and financial health of the parent company and cooperative arrangements in place to address any problems in the institution. It should also continue to encourage the conversion of foreign branches with major retail operations to domestically incorporated subsidiaries.</p>
<b>17. Credit risk</b>	<p>MAS should ensure that resources assigned to assess banks' management of loan and investment portfolios, as set out in their CRAFT analyses, are commensurate with the level and potential systemic consequences of credit risk.</p> <p>Also, MAS should increase its attention to onsite inspections of credit risk. For the major banks, MAS should establish an onsite multiyear supervisory cycle to review all sectors of banks' credit exposures according to their CRAFT analyses. Special attention should be given to borrowers' ability to repay under stressed economic and financial circumstances, and to loan restructurings that might mask borrowers' weaknesses. The inspections do not need to be lengthy exercises but should include a review of a sample of credit files, sufficient to provide a reasonable assurance of banks' quality of their credit exposures.</p>

## G. Authorities' Response to the Assessment

**44. The MAS welcomes the positive assessment of Singapore's implementation of the Basel Core Principles for Effective Banking Supervision and wishes to express its appreciation to the IMF and its assessors for the constructive dialogue and the assessment.**

**45. We note the assessors' observations on the existing safeguards, their recommendations on how MAS' operational independence could be further strengthened, and their finding that there had been no instance where MAS' operational independence was compromised.** We also note the assessors' comments on the potential for conflict between MAS' prudential supervision and developmental functions, and their finding that there had been no instance where prudential supervision was compromised by the developmental function. We reiterate our position that MAS has operational autonomy in the exercise of its powers and functions, and that prudential supervision objectives are not compromised by the development function. MAS will review the assessors' recommendations, and make changes, where necessary, to ensure that it continues to maintain operational independence and that prudential supervision is not compromised by the developmental function.

**46. MAS recognizes that foreign bank branches have a significant presence in Singapore and hence supervises them in the same manner as locally-incorporated banks.** MAS participates in the supervisory colleges of all the major foreign banks in Singapore and will continue to strengthen information sharing and cooperative arrangements with the home supervisor of the major foreign banks in Singapore. To achieve its supervisory objectives, MAS requires cooperation from these home supervisors and looks forward to working closely with them. MAS is working with QFBs that have a significant retail presence to locally incorporate their retail operations. New QFBs under future FTAs will also have to incorporate their retail operations.

**47. MAS concurs with IMF's observation that the Singapore economy is currently at the expansionary part of the credit cycle. MAS conducts onsite credit inspections of the major banks in Singapore on a regular basis.** In addition, the buoyant property market and the potential rise in interest rates that could pose problems for overleveraged borrowers had led MAS to conduct thematic residential mortgage inspections in late 2012. In recognition of the growing trade finance activities among the major banks, MAS also inspected their trade finance operations in 2012 and 2013. These regular onsite credit inspections and thematic reviews complement our already intrusive supervisory stance, which includes offsite monitoring of their credit risk management approaches and portfolio quality. MAS looks to increase the frequency or intensity of our supervisory engagements with the major banks in the area of credit risk, taking into account the prevailing conditions in the macroeconomic environment.

**48. Notwithstanding the IMF's overall assessment that Singapore shows a very high level of compliance with the Basel Core Principles and its implementation, MAS will continue to strengthen our supervisory framework to further promote the safety and soundness of the banking sector in Singapore.**



# CPSS-IOSCO PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

## A. Introduction

**49. This Report on the Observance of Standards and Codes (ROSC) summarizes the findings and recommendations of the assessment of two main central counterparties in Singapore based on the Committee on Payment and Settlement Systems of the International Organization of Securities Commission (CPSS-IOSCO) Principles for financial market infrastructures (PFMIs).** The assessment was undertaken in the context of the IMF's Financial Sector assessment Program (FSAP) to Singapore in May 2013. The assessors were Froukelien Wendt of the IMF's Monetary and Capital Markets Department and Gynedi Srinivas of the World Bank's Payment Systems Development Group. The assessors would like to thank MAS, the Singapore Exchange Limited (SGX), and other financial institutions for the excellent cooperation and hospitality.

**50. The objective of the assessment has been to identify potential risks that may affect financial stability.** While safe and efficient central counterparties (CCPs) contribute to maintaining and promoting financial stability and economic growth, they may also concentrate risk. If not properly managed, FMIs can be sources of financial shocks, such as liquidity dislocations and credit losses, or a major channel through which these shocks are transmitted across domestic and international financial markets.

**51. The scope of the assessment includes the Central Depository (Pte) Limited (CDP), Singapore Exchange Derivatives Clearing Limited (SGX-DC) and its authority, the MAS.** The CCPs are assessed using the CPSS-IOSCO Principles for FMIs. The MAS is assessed using the responsibilities for authorities of FMIs. The CDP has been assessed during the previous FSAP in 2002/2003 using the CPSS-IOSCO Recommendations for the Securities Settlement System (SSS). Other FMIs that were assessed during the previous FSAP are the new MASW Electronic Payment System (MEPS) and the MEPS-Singapore Government Securities (SGS). SGX-DC has not been assessed before.

## B. Information and Methodology Used for Assessment

**52. The information used in the assessment includes relevant national laws, regulations, rules and procedures governing the CCPs, and other available material.** Important sources of information have been the self assessments of the CCPs against the PFMI as well as the self assessment of MAS. In addition, the assessment benefited from discussions with MAS, SGX, and main stakeholders. Other available material included annual reports, websites from the regulator, overseers, supervisors, operators and stakeholders, and other relevant documents.

## C. Main Findings

**53. Singapore has a well developed payment, clearing, and settlement infrastructure, which includes two CCPs for financial products.** The infrastructure includes a large value payment system operated by the central bank and securities and derivatives clearing and settlement systems

operated by the Singapore Exchange (SGX). The two financial CCPs are (i) the CDP that clears equities and corporate debt securities; and (ii) the SGX-DC that clears exchange traded and over the counter (OTC) derivatives. CDP's value of transactions as a percentage of GDP was 94 percent in 2012. Worldwide SGX-DC is the eighth largest clearer of equity index futures. Singapore is also one of the largest trading centers for OTC derivatives in Asia (just under S\$9 trillion in outstanding contracts). Its systemic importance is expected to increase with the implementation of the G20 reforms comprising the mandatory clearing of all standardized OTC derivatives.

**54. FMI in Singapore are subject to effective regulation, supervision and oversight by MAS.** The legal framework provides MAS with sufficient powers to obtain timely information and induce change. MAS' supervision of CCPs and securities settlement systems is guided by the Securities and Futures Act (SFA) and its accompanying regulations. In addition, MAS has publicly announced its adoption of the PFMI. The relevant regulatory framework and policies are publicly disclosed.

**55. CDP and SGX-DC are assessed as sound and efficient CCPs that comply with relevant international standards.** They are subject to SGX's comprehensive and transparent risk management framework comprising clear policies, sound governance arrangements, operational systems and default and business continuity procedures that are regularly tested. They are subject to oversight by the MAS.

**56. Credit and liquidity risk management frameworks enable the CCPs to maintain sufficient financial resources to cover the default of the clearing member and its affiliates with the largest exposure as well as the default of the two financially weakest clearing members.** The CCPs continuously monitor credit exposures during the day. Margin models are risk based and margins are determined twice a day for CDP and four times a day for SGX-DC. Initial margin is calculated with a confidence level of at least 99 percent and a close-out period ranging from 1 to 5 days, depending on the liquidity of the contract. The margin models are subject to back testing, sensitivity analysis and in-depth reviews by the internal risk management unit and MAS. Each CCP has established a clearing fund to cover losses in extreme circumstances. Total financial resources are stress-tested daily using conservative historical and other scenarios. The CCPs have defined a risk management waterfall for the use of financial resources in case of credit losses upon member default, which includes their own capital constituting at least 25 percent of the clearing fund. The CCPs obtain a comprehensive estimation of their participants' risk profile by also monitoring positions of large customers as well as exposures of their participants in other markets. They are currently not considered as CCPs of systemic importance in multiple jurisdictions; however, as volumes grow, the coverage of financial resources should include the default of the two largest clearing members. The mission team has identified several areas that may benefit from further development.

**57. SGX's recovery plan should be enhanced in line with ongoing international policy developments to ensure the continuation of critical operations in extreme circumstances.** It is recommended to extend the number and nature of the scenarios considered in the recovery plan, going beyond the default of several clearing members, prolonged business losses and reverse stress

tests. The scenarios may cover extreme but plausible events, such as the simultaneous default of settlement banks or the default of a custodian. In addition, reduced liquidity availability in supporting markets, such as the foreign exchange (FX) market, should be considered. Loss sharing arrangements may potentially be developed for the international OTC financial derivatives market.

**58. The CCPs are encouraged to explore with their members taking Singapore government securities as collateral, instead of cash, to improve access to central bank liquidity in times of stress.** A standing facility is provided by MAS, which allows the CCPs to repo Singapore government securities and other eligible collateral for overnight Singapore dollar funding. While the CCPs are able to accept non-cash assets, including government securities, as eligible collateral, members prefer to provide cash as collateral. Efforts should be made to enable the use of MAS' standing facilities on an immediate basis, for example by collecting a part of the collateral in the form of Singapore government securities instead of cash. This will reduce the need for the CCPs to convert cash to government securities in times of banking uncertainties.

**59. The global regulatory reforms for OTC derivative clearing and trade reporting expose SGX-DC potentially to legal risk due to conflicts of laws.** MAS is encouraged to continue its efforts to mitigate those risks in close cooperation with foreign authorities. OTC derivatives reforms in the U.S. and the European Union (EU) may have extra-territorial implications for SGX-DC as well as market participants.<sup>5</sup> MAS is encouraged to strive for a joint approach with relevant foreign authorities to prevent the negative implications of conflicts of law, such as inconsistencies and legal uncertainty.

**60. Competition risk may rise in the coming years, following increased competition with foreign CCPs, especially for OTC derivatives.** The mandatory clearing obligation will shift bilateral clearing among banks to CCPs, increasing potential clearing volumes and subsequently competition between CCPs. Competition may lead to reduced clearing-related fees and improved clearing services; however, as collateral is costly, the CCP may face market pressures to reduce collateral requirements as well. SGX and MAS are encouraged to continue compliance with international standards and not compromise on the safety of the CCP.

**61. For CDP, the possibility of separating the functions of CCP and Central Securities Depository (CSD) into two distinct legal entities under the existing holding company structure could be explored in line with international best practices.** CDP provides two services with a distinct risk profile as a CSD and a CCP. CDP's own resources, including capital, are not clearly separated and earmarked between its CSD and CCP functionalities. In times of crisis, this could adversely impact the discharge of its roles as a CCP and a CSD. It is recommended that CDP review its legal structure to facilitate the potential execution of its recovery and resolution framework.

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<sup>5</sup> Under the Dodd-Frank Act SGX-DC would be considered a non-U.S. institution engaged in derivatives transactions with US persons and is subsequently subject to U.S. registration and regulatory requirements. Non-EU CCPs, such as SGX-DC, are prohibited from providing clearing services to entities established in the EU unless they are recognized by the European Securities and Markets Authority.

**62. Although risks related to the link with the Chicago Mercantile Exchange (CME) are assessed to be low, risk management procedures should be upgraded to be fully in line with international standards.** The letters of credit—used to cover daily credit exposures that the CME poses to SGX-DC—should be covered by collateral or replaced in full by highly liquid assets with low credit risk. The SGX-DC clearing fund should not be used to cover potential losses related to the link, as this reduces the resources that the CCP holds to address the risks related to the potential default of clearing members.

**63. The supervision of the securities clearing and settlement systems should be improved by formalizing cooperative crisis management arrangements among the MAS and relevant U.S. authorities.** The MAS, SEC, and CFTC have a memorandum of understanding (MoU) enabling information sharing that also covers the link between SGX-DC and the CME. The MoU should be extended by adding a common crisis management framework that defines the roles and responsibilities of the MAS and the relevant U.S. authorities in crisis scenarios. Such a framework may facilitate effective and timely communication and potentially avoid losses or reduce the size of financial losses following financial or operational crisis events.

**Table 3. CDP Summary Compliance with the CPSS-IOSCO Principles for FMIs—ROSC**

Principle	Comments
<b>1. Legal basis</b>	
<p>CDP has a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities. CDP has rules, procedures, and contracts that are clear, understandable, and consistent with relevant laws and regulations in relation to collateral arrangements, novation, netting and setting-off arrangements, settlement finality and in protecting the rights and interest of CDP, its participants and their customers in the event of a default backed by the relevant legal statutes in Singapore. This provides a high degree of certainty that actions taken by CDP under such rules and procedures will not be voided, reversed, or subject to stays. CDP articulates the legal basis for its activities to relevant authorities, participants, and, where relevant, to the participants' customers, in a clear and understandable way.</p>	
<b>2. Governance (applies to both CDP and SGX-DC)</b>	
<p>SGX applies governance arrangements that are transparent and support the stability of the financial system. The roles and responsibilities of its board and management are clearly described and publicly available. SGX's company objectives include the maintenance of safe and efficient clearing and settlement facilities. SGX has established a risk management committee and a regulatory conflicts committee that includes independent board members to identify, monitor and manage companywide risks as well as CCP related risks. Dedicated risk management units ensure that the risk management framework is executed on an ongoing basis. In addition, SGX has sound internal control policies to provide for independent assessments of the effectiveness of the risk management framework of SGX. Given that CDP discharges the role of a CSD and a CCP, it is suggested to explore the possibility of separating the CCP and CSD functions of CDP into two distinct legal entities under the existing holding company structure.</p>	
<b>3. Framework for the comprehensive management of risks (applies to both CDP and SGX-DC)</b>	
<p>SGX uses an effective enterprise risk management (ERM) framework to manage companywide risks and CCP related risks. The framework entails a top-down approach, with annual board decisions on risk types and limits, as well as bottom up assessments of divisions and units of the risks specific to their functions. The governance of SGX, its policies and systems support the enterprise risk framework. The key risks for 2013 include default risks, operational risks, regulatory risks, and competition risk. A recovery plan is available, which can be further developed. SGX has identified critical operations as well as scenarios that may potentially prevent SGX to continue operations. It is recommended to extend the number and nature of the scenarios considered, going beyond the default of several clearing members. The scenarios may cover extreme but plausible events, such as the default of more than one large banks that fulfill various roles to the CCP, such as settlement banks, liquidity providers but also custodians. In addition, reduced liquidity in supporting markets, such as the FX market should be considered. One of the strategies that SGX-DC may potentially consider for its over-the-counter financial products (OTCF) clearing activities are loss-sharing arrangements that go beyond the current mutualization of the clearing fund.</p>	

Principle	Comments
<b>4. Credit risk</b>	<p>CDP has a robust credit risk exposure framework covering credit exposures arising from both current and potential future exposures arising from its payment, clearing, and settlement processes. The framework identifies sources of credit risk, routinely measures and monitors credit exposures, and uses appropriate risk-management tools to control these risks. CDP covers its current and potential future exposures to each participant fully with a high degree of confidence using margin and other prefunded financial resources such as the clearing fund. CDP determines the amount and regularly tests the sufficiency of its total financial resources available which are deemed adequate to cover the default of the clearing member (and its affiliates) with the largest exposure and the two financially weakest members. Stress tests covering a wide range of stress scenarios are performed on a daily basis and analyzed and necessary follow-up measures taken. Appropriate governance arrangements are in place.</p>
<b>5. Collateral</b>	<p>CDP accepts collateral assets with low credit, liquidity, and market risks. It has in place prudent valuation practices and conservative haircut methodologies that are regularly tested and take into account stressed market conditions. CDP uses the Collateral Submission Management and Optimization System (COSMOS) system for collateral management purposes. Validation rules are built into COSMOS to allow only permitted collateral to be accepted into the system. COSMOS also allows clearing members to manage margin and financial requirement collateral placed with CDP (including submitting electronic requests to deposit or withdraw collateral). While CDP is able to accept other kinds of collateral such as SGS and UST, it has only received cash as collateral from members. It is recommended that CDP explore with members the possibility of widening the collateral pool apart from cash and examine the feasibility of receiving a part of the collateral in the form of Singapore government securities, as it has the necessary systems and resources in the form of COSMOS with prudent valuation and stable haircut methodologies. Further, this would enable CDP to avail of MAS standing facility for repo in times of stress.</p>
<b>6. Margin</b>	<p>The margin on securities was introduced in January 2013. CDP has a reliable source of timely price data for its margin model. The initial margin meets an established single-tailed confidence level of at least 99 percent. Intra-day margin calls are made. CDP analyses and monitors its model performance and overall margin coverage by conducting daily back testing and monthly sensitivity analysis. CDP is encouraged to further fine-tune the margin model parameters based on its ongoing evaluation of the model's performance for a more efficient and effective margin requirement in various scenarios.</p>
<b>7. Liquidity risk</b>	<p>CDP has a risk management framework to manage liquidity risk from its participants, settlement banks, clearing banks, custodian banks, liquidity providers, and deposit-keeping banks. Stress testing is carried out by CDP to determine the amount and sufficiency of its liquid resources. CDP has liquid resources available which are deemed adequate to cover the default of the clearing member and its affiliates with the largest exposure and the two financially weakest members. The risk exposure of a participant who plays multiple roles is monitored individually in its respective roles and on an aggregated basis daily. Daily aggregate monitoring has been introduced from July 15, 2013.</p>

Principle	Comments
<b>8. Settlement finality</b>	
	<p>CDP's rules and regulations provide for final settlement of securities and funds on the value date. The final inter-bank settlement of funds takes place through MEPS+ at 4:30 p.m. The securities are earmarked or blocked in the securities account at 12 noon with delivery happening during the batch processing cycle for securities which starts at 8:00 p.m. This time lag has the potential to create settlement risks. It is recommended that the settlement lag for securities settlement be reduced to avoid this possibility.</p>
<b>9. Money settlements</b>	
	<p>CDP conducts money settlements for IBS and DVP using a combination of commercial and central bank money with the final inter-bank funds settlement taking place in central bank money. CDP has rules and risk management frameworks in place to minimize and control the credit and liquidity risks arising from the use of commercial bank money.</p>
<b>10. Physical deliveries</b>	
	<p>Not applicable.</p>
<b>11. Central securities depositories</b>	
	<p>Not applicable.</p>
<b>12. Exchange-of-value settlement systems</b>	
	<p>Principal risk is eliminated with the securities to be delivered earmarked and blocked in the pre-settlement run on the value date. On successful completion of earmarking of securities balances for delivery, the final settlement of funds balances happens in the afternoon followed by delivery of securities on the night of the value date.</p>
<b>13. Participant-default rules and procedures</b>	
	<p>CDP has an effective default management framework with defined rules and procedures to manage a participant default. The rules and procedures provide for CDP to take timely action to contain losses and liquidity pressures and continue to meet its obligations. It publicly discloses its default procedures and conducts fire drills on a periodical basis.</p>
<b>14. Segregation and portability</b>	
	<p>CDP has segregation and portability arrangements that effectively protect a participant's customers' positions and related collateral from the default of a participant. In the case of securities transactions, where a member defaults, the member's customers' positions are protected through the process of "renovation," under which CDP settles such positions directly with the defaulted clearing member's customers. In the case of Marginable Futures Contracts (futures contracts that are listed and traded on Singapore Exchange Securities Trading Limited (SGX-ST) and which are subject to margin requirements), CDP holds all collateral on trust and clearing members' collateral, customers' collateral and its own assets are all separately held. In the event of a clearing member's default, all customers' positions are protected through CDP's portability arrangements under the CDP Clearing Rules. CDP's integrated back office client accounting system enables it readily to identify positions of a participant's customers. Customer collateral is protected in a trust arrangement and the details thereof are publicly disclosed in the CDP clearing rules.</p>



Principle	Comments
<b>15. General business risk</b>	<p>General business risks are managed in accordance with the risk governance structures and the ERM framework. CDP identifies, monitors, and manage its general business risk and holds 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 these losses materialize for up to six months. Its liquid net assets are deemed sufficient to ensure a recovery or orderly wind-down of critical operations and services in line with its existing recovery and resolution framework. It has a capital plan with a range of actions which has been approved by the SGX Board on the recommendation of the risk management committee.</p>
<b>16. Custody and investment risks</b>	<p>CDP has a well laid-down custody and investment policy. Both clearing members' and customers' assets are held in trust and are bankruptcy remote. Customer and clearing members' assets are kept separate from each other and from CDP's own assets. SGX has an established overarching policy framework which addresses counterparty credit and concentration risks arising from banks and custodians that CDP uses for safekeeping of financial assets. CDP holds its own cash reserves and cash collateral from its clearing members in either current or short term deposits with banks.</p>
<b>17. Operational risk (applies to both CDP and SGX-DC)</b>	<p>SGX (including CDP and SGX-DC) have in place appropriate systems, policies, procedures, and controls to mitigate operational risk which are reviewed, tested and audited periodically. Operational risks are reviewed through an annual top-down approach and an annual bottom-up risk self-assessment exercise. These processes are part of SGX's ERM framework. The Board has delegated to the RMC the authority to approve the operational risk management strategies. Systems are designed to ensure a high degree of security and operational reliability and have adequate, scalable capacity. SGX has comprehensive physical and information security policies that address potential vulnerabilities and threats.</p> <p>Business continuity management is ensured through a permanent split-site which is staffed. SGX's organizational resilience management plan is aligned to the MAS business continuity management guidelines and principles for the financial services Industry. All critical systems have a recovery time objective of not more than two hours. An annual industry wide exercise with market participants is conducted to test the recovery procedures. The business continuity management plans are documented and tested. When volumes grow and the systemic importance of the CCPs increases, eventually in multiple jurisdictions, SGX could consider to establish a third site to further increase the resilience of the operational systems.</p>
<b>18. Access and participation requirements</b>	<p>CDP has objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access. CDP monitors compliance with its participation requirements on an ongoing basis and has clearly defined and publicly disclosed procedures for facilitating the suspension and orderly exit of a participant that breaches, or no longer meets, its participation requirements.</p>
<b>19. Tiered participation arrangements</b>	<p>CDP has an extensive risk management framework for monitoring and mitigating tiered participation arrangements. Its rules and procedures allow it to gather information about indirect participation in order to identify, monitor, and manage any material risks to it from such tiered participation arrangements. These measures enable CDP to identify those indirect participants responsible for a significant proportion</p>



Principle	Comments
	of transactions processed by it and whose transaction volumes or values are large relative to the capacity of the clearing member and take effective measures.
<b>20. FMI links</b>	
	Not applicable.
<b>21. Efficiency and effectiveness</b>	
	CDP's products and services cater to various participants' requirements and the market. CDP is efficient and effective in meeting the requirements of its participants and the markets it serves through timely processing of transactions, maintaining sufficient financial resources to minimize market disruptions in the event of a default by members and minimizing systems downtime.
<b>22. Communication procedures and standards</b>	
	CDP uses internationally accepted communication procedures and standards in order to facilitate efficient payment, clearing, settlement, and recording activities. Where necessary, CDP uses proprietary applications or message converters to translate between proprietary messages and SWIFT messages for securities money settlement, corporate actions announcement information and CDP shareholdings position with the foreign and local custodian banks.
<b>23. Disclosure of rules, key procedures, and market data</b>	
	CDP has clear and comprehensive rules and procedures and provides sufficient information to participants enabling them to have an accurate understanding of the risks. The fees and other material costs they incur by being a participant of CDP are also disclosed. All relevant rules and key procedures are publicly disclosed in English. CDP has completed the CPSS-IOSCO Disclosure framework for financial market infrastructures. CDP has plans to update the document following any material changes to it and its environment and, at a minimum, at least every two years.
<b>24. Disclosure of market data by trade repositories</b>	
	Not applicable.

**Table 4. SGX-DC Summary Compliance with the CPSS-IOSCO Principles for FMIs—ROSC**

Principle	Comments
<b>1. Legal basis</b>	<p>SGX-DC has a sound legal basis for its clearing activities and the enforceability of related rights and obligations are established with a high degree of certainty. The SFA, SF(CF)R and the SGX-DC rules govern sufficiently the novation and collateral arrangements, interoperability, and default procedures. The SFA provides for a firm statutory foundation for finality, netting, set-off, and closing out of positions. There is a high certainty that the rules, procedures, and contracts are enforceable in the Singapore and foreign jurisdictions. SGX has identified and mitigated potential conflict of laws issues concerning the admittance of non-local clearing members, as well as the use of collateral issued by U.S., European, and Japanese governments.</p> <p>The global regulatory reforms related to OTC derivatives clearing and reporting may, however, expose SGX-DC to legal risk due to conflicts of laws, in particular the U.S. and EU laws. MAS is encouraged to continue its efforts to mitigate those risks, in close cooperation with foreign authorities. OTC derivatives reforms in the U.S. and EU, enacted primarily through Title VII of the Dodd-Frank Act and EMIR respectively, may have extra-territorial implications for SGX-DC as well as market participants and could create complexity, cost, fragmentation, and potentially systemic risk in international markets due to overlapping and contravening legislation in other nations that deal with U.S. and EU institutions. MAS should continue its efforts to reach agreement with relevant foreign authorities on a common approach to avoid these legal risks.</p>
<b>2. Governance (applies to both CDP and SGX-DC)</b>	<p>SGX applies governance arrangements that are transparent and support the stability of the financial system. The roles and responsibilities of its board and management are clearly described and publicly available. SGX's company objectives include the maintenance of safe and efficient clearing and settlement facilities. SGX has established a risk management committee and a regulatory conflicts committee that includes independent board members to identify, monitor, and manage companywide risks as well as CCP related risks. Dedicated risk management units ensure that the risk management framework is executed on an ongoing basis. In addition, SGX has sound internal control policies to provide for independent assessments of the effectiveness of the risk management framework of SGX. Given that CDP discharges the role of a CSD and a CCP, it is suggested to explore the possibility of separating the CCP and CSD functions of CDP into two distinct legal entities under the existing holding company structure.</p>
<b>3. Framework for the comprehensive management of risks (applies to both CDP and SGX-DC)</b>	<p>SGX uses an effective enterprise risk management (ERM) framework to manage companywide risks and CCP related risks. The framework entails a top-down approach, with annual board decisions on risk types and limits, as well as bottom up assessments of divisions and units of the risks specific to their functions. The governance of SGX, its policies and systems support the enterprise risk framework. The key risks for 2013 include default risks, operational risks, regulatory risks, and competition risk. A recovery plan is available, which can be further developed. SGX has identified critical operations as well as scenarios that may potentially prevent SGX from continuing operations. It is recommended to extend the number and nature of the scenarios considered, going beyond the default of several clearing members. The scenarios may cover extreme but plausible events, such as the default of more than one large banks that fulfill various roles to the CCP, such as settlement banks, liquidity providers, but also custodians. In addition, reduced liquidity in supporting markets, such as the FX market, should be considered. One of the</p>

Principle	Comments
	strategies that SGX-DC may potentially consider for its OTCF clearing activities are loss-sharing arrangements that go beyond the current mutualization of the clearing fund.
<b>4. Credit risk</b>	
	SGX-DC applies a comprehensive credit risk management framework and maintains sufficient financial resources to cover the default of the clearing member and its affiliates with the largest exposure as well as the default of the two financially weakest clearing members. SGX-DC continuously monitors credit exposures during the day. A clearing fund is established to cover potential losses in extreme circumstances. The total financial resources are stress tested daily, taking into account various conservative historical and other scenarios. SGX-DC has defined a risk management waterfall for the use of financial resources in case of credit losses, which includes its own capital. The legal and regulatory framework supports this framework. SGX-DC is currently not considered as a CCP that is of systemic importance in multiple jurisdictions; however, in case volumes grow, the coverage of its financial resources should include the default of the two largest clearing members.
<b>5. Collateral</b>	
	SGX-DC accepts cash, government securities and shares as collateral to cover credit exposures. Collateral is subject to conservative haircuts. Government bonds are accepted from the U.S., Singapore, Japan, France and Germany. Shares have only recently been admitted and face a haircut of 30 percent. In practice, the majority of collateral is deposited in cash. Collateral is marked to market on a daily basis. Concentration limits can be defined per clearing member, in addition to the current concentration limits that define a maximum threshold per issue. It is recommended that SGX-DC explore with members the feasibility of receiving a part of the collateral in the form of Singapore government securities, as this would enable the CCP to use MAS standing facility for repo in times of stress.
<b>6. Margin</b>	
	All products cleared by SGX-DC are subject to an effective margin system. The margin model is risk based and comprises both initial and variation margin. Initial margin should cover potential future exposures. Variation margins are called to ensure the coverage of current exposures. Margin models apply international standards and are subject to back testing, sensitivity analysis and in-depth reviews by the internal risk management unit and the MAS. The initial margin is calculated with at least 99 percent confidence level with a close-out period from one to five days, depending on the liquidity of the contract. SGX-DC allows for offsets in a conservative way. Another conservative feature is that clients are margined on a gross basis, although certain exemptions exist for clients that belong to the same legal beneficiary owner. Clients can benefit from spread claims prescribed by SGX which is a standard feature of standardized portfolio analysis of risks (SPAN). SGX-DC is able to make intraday margin calls, based on updated prices and positions. SGX-DC is encouraged to further reduce the time between the margin calls and the actual deposit of margin.
<b>7. Liquidity risk</b>	
	SGX-DC also has an effective framework for the management of liquidity risks. SGX-DC is able to identify, measure, and monitor its settlement and funding flows on an ongoing basis. SGX-DC monitors its liquidity exposures to both its clearing members as well as servicing banks on a daily basis. If needed, SGX-DC can draw on several credit lines provided by local commercial banks. The liquidity providers need to comply with specific criteria. To manage its multicurrency need, SGX-DC can draw on credit lines in multiple currencies, as well as rely on the deep and liquid FX market in Singapore. SGX-DC does have a

Principle	Comments
	central bank account and may obtain SGD liquidity by entering into a repurchase agreement of eligible government securities.
<b>8. Settlement finality</b>	
	Settlement finality is provided for settlements in cash as well as securities that are deposited as collateral. The SGX-DC contractual arrangements clearly specify the moment of finality. The contractual obligations are set out in the SGX-DC clearing rules, the letter of undertaking with the settlement banks and the MOS agreement with the CME. The SFA supports the enforceability of the contractual obligations at a statutory level. Finality occurs real time as soon as settlements are considered complete in accordance with the contractual obligations.
<b>9. Money settlements</b>	
	SGX-DC conducts money settlements through commercial banks that are selected by SGX-DC as settlement banks. Most settlements are in U.S. dollars and Japanese Yen. SGX-DC has no direct access to the respective central banks of issue. Settlements in Singapore dollar are relatively small and general clearing members do not have access to the MEPS+ system. Settlement bank risk is reduced by applying strict selection criteria for settlement banks, such as capital ratios, creditworthiness, access to liquidity, and operational reliability. SGX-DC monitors compliance with these criteria on a regular basis. In addition, SGX-DC monitors its concentration to the settlement banks and reduces its exposures if concentration limits are reached. SGX-DC should consider using MEPS+ for direct settlements in Singapore dollar.
<b>10. Physical deliveries</b>	
	For physical settlements, SGX-DC acts as the escrow agent and does not guarantee the delivery of contracts. Commodity contracts for rubber and oil are accepted for physical delivery. SGX-DC's clearing rules describe the obligations of market participants as well as procedures and controls to manage the delivery process.
<b>11. Central securities depositories</b>	
	Not applicable.
<b>12. Exchange-of-value settlement systems</b>	
	Not applicable.
<b>13. Participant-default rules and procedures</b>	
	SGX-DC has well-developed default rules and procedures to manage a participant's default. The SGX-DC clearing rules comprehensively describe the declaration of a default and risk mitigating actions to be taken by the CCP. The CCP also has appropriate discretionary power to implement these rules. In addition, the CCP has internal guidelines and procedures to manage default situations. These procedures are tested on an annual basis with the involvement of clearing members. Key aspects of the default procedures are publicly available. SGX-DC is encouraged to conduct drills for exchange traded derivatives and OTC commodities derivatives on an annual basis as well.
<b>14. Segregation and portability</b>	
	Customers' positions and related collateral are protected by segregation and portability arrangements in case of the default of their clearing member. SGX-DC holds customer and clearing member collateral on trust. Customer collateral is held separately from both clearing members' collateral and SGX-DC's own assets. Customers' positions are administrated in individual and omnibus accounts, with powers for the

Principle	Comments
	<p>CCP to collect information on customers' positions that are part of an omnibus structure. Portability arrangements allow customers as well as the CCP to transfer positions and collateral to surviving clearing members if needed. Porting of positions and collateral has been conducted during recent defaults. Customers' positions cannot always be transferred, but will sometimes need to be liquidated. The SGX-DC rules disclose such exceptions and risks to customers.</p>
<b>15. General business risk</b>	<p>The identification, monitoring, and mitigation of general business risks is part of SGX's ERM framework and financial and business plans. New products are analyzed on their risk implications before launching. SGX-DC holds sufficient liquid net assets funded by equity so that it can continue operations and services as a going concern if it incurs general business losses. The amount of liquid net assets is sufficient to cover at least six months of current operating expenses. If needed, SGX is able to raise additional equity if equity falls close to the amount needed.</p> <p>Competition risk may rise in the coming years, following increased competition with foreign CCPs, especially for OTC financial derivatives. The mandatory clearing obligation will shift bilateral clearing among banks to CCPs, increasing potential clearing volumes and subsequently competition between CCPs. Competition may lead to reduced clearing-related fees and improved clearing services; however, as collateral to cover CCPs risk exposures is costly, the CCP may face market pressures to reduce collateral requirements as well. SGX and MAS are encouraged to continue compliance with the international standards and not compromise on the safety of the CCP, which should not prevent them from searching for efficiencies in the risk management framework.</p>
<b>16. Custody and investment risks</b>	<p>SGX-DC holds its own and its participants' assets at supervised and regulated banks and national depositories. Cash assets are kept in banks, either in current or short term deposits. Non-cash assets, which comprise of selected government securities, and SGX-ST listed securities, are kept with custodians and not invested. SGX-DC has appropriate selection criteria for banks and custodians and regularly monitors compliance with these criteria.</p>
<b>17. Operational risk (applies to both CDP and SGX-DC)</b>	<p>SGX (including CDP and SGX-DC) have in place appropriate systems, policies, procedures, and controls to mitigate operational risk, which are reviewed, tested, and audited periodically. Operational risks are reviewed through an annual top-down approach and an annual bottom-up risk self-assessment exercise. These processes are part of SGX's ERM framework. The Board has delegated to the RMC the authority to approve the operational risk management strategies. Systems are designed to ensure a high degree of security and operational reliability and have adequate, scalable capacity. SGX has comprehensive physical and information security policies that address potential vulnerabilities and threats.</p> <p>Business continuity management is ensured through a permanent split-site which is staffed. SGX's organizational resilience management plan is aligned to the MAS business continuity management guidelines and principles for the financial services Industry. All critical systems have a recovery time objective of not more than two hours. An annual industry wide exercise with market participants is conducted to test the recovery procedures. The business continuity management plans are documented and tested. When volumes grow and the systemic importance of the CCPs increases, eventually in multiple jurisdictions, SGX could consider to establish a third site to further increase the resilience of the operational systems.</p>

Principle	Comments
<b>18. Access and participation requirements</b>	
	Participant's access criteria allow for fair and open access to SGX-DC's services. Access criteria are publicly disclosed. Procedures are in place to facilitate the suspension and orderly exit of a participant that no longer meets the participation requirements. SGX-DC monitors compliance with its access criteria on an ongoing basis.
<b>19. Tiered participation arrangements</b>	
	SGX-DC has effective measures in place to identify, monitor, and manage risks arising from participants' customers. Rules allow the CCP to gather detailed information on customers to identify and evaluate related exposures. In its review, the CCP will evaluate the financial soundness of the customers and the probability and impact of a potential default. Exposures are monitored on a daily basis. Key information is reported to the board on a monthly basis and measures are taken if needed.
<b>20. FMI links</b>	
	Risks related to the link with the CME are monitored daily and mitigated by a letter of credit issued by a consortium of banks. Five exchange-traded financial derivatives are eligible to be cleared via the link, which provides clearing members of the SGX-DC and CME with the opportunity to allocate transactions, executed at one exchange, to be cleared by their clearing house of choice. Although risks are assessed to be low, risk management procedures should be upgraded to be fully compliant with the PFMI. The letter of credit should be covered by collateral or replaced in full by highly liquid assets with low credit risk. The SGX-DC clearing fund should not be used to cover potential losses related to the link, as this reduces the resources that the CCP holds to address the risks related to the potential default of clearing members.
<b>21. Efficiency and effectiveness</b>	
	SGX-DC has arrangements in place to consult its participants on a regular basis to address their needs in the design of its operations and services. SGX-DC has established mechanisms for the regular review of its efficiency and effectiveness, such as customer satisfaction surveys, user groups, and internal control procedures. SGX-DC reviews its pricing structure and system-related cost on a regular basis.
<b>22. Communication procedures and standards</b>	
	Internationally accepted communication procedures and standards are used for communication between SGX-DC, its clearing members, settlement banks, and other FMIs. SGX's systems generate SWIFT messages to the members' settlement banks for money settlement. The SWIFT messages are based on ISO15022 standards.
<b>23. Disclosure of rules, key procedures, and market data</b>	
	SGX-DC has disclosed responses to the CPSS-IOSCO Disclosure framework for FMIs, which enables participants to appropriately assess the risks they incur by participating in the CCP. SGX-DC disclosed its rules and regulations on its website. The website also contains statistics and various descriptions of the risk management and operational systems. Fees are also publicly disclosed.
<b>24. Disclosure of market data by trade repositories</b>	
	Not applicable.

**Table 5. Authorities' Summary Compliance with the CPSS-IOSCO Responsibilities—ROSC**

Recommendation	Comments
<b>A. Regulation, supervision, and oversight of FMIs</b>	
<p>FMIs in Singapore are subject to effective regulation and supervision by MAS. Powers for the supervision of payment systems are derived from the Payment Systems (Oversight) Act. MAS' supervision of CCPs, SSS and TRs is governed by the SFA and related regulations. CSDs are regulated under the Companies Act and related regulations. These laws and regulations are publicly disclosed.</p>	
<b>B. Regulatory, supervisory, and oversight powers and resources</b>	
<p>The powers and resources of the MAS are considered sufficient. Under the respective laws, MAS has powers to obtain relevant and comprehensive information in a timely manner and enforce corrective action. The SFA allows MAS to impose conditions or restrictions on activities or products, issue directions, order cessation, or remove officers of a Designated Clearing House under the SFA (DCH). MAS has sufficient financial and staff resources to fulfill its responsibilities.</p>	
<b>C. Disclosure of policies with respect to FMIs</b>	
<p>MAS' supervisory approach to FMIs is described in a dedicated monograph, which is publicly disclosed. The monograph 'Supervision of FMIs in Singapore' published by MAS in January 2013 sets out MAS' supervisory objectives, regulatory framework and supervisory approach. The monograph is published on MAS' website along with relevant guidelines and other public documents.</p>	
<b>D. Application of the principles for FMIs</b>	
<p>The MAS has publicly announced that it adopts the PFMI. The monograph 'Supervision of FMIs in Singapore' published by the MAS in January 2013 states that the MAS adopts the PFMI when carrying out its supervision of FMIs. MAS' approach is to adopt the PFMI through compliance of the FMIs with the relevant laws and subsidiary legislation, which encompass specific requirements of the PFMI.</p>	
<b>E. Cooperation with other authorities</b>	
<p>MAS should extend its MoU with the regulators of the CME by adding formalized cooperative crisis management arrangements to the current provisions. MAS, the SEC and CFTC have an MoU covering information sharing agreements on the link between SGX-DC and the CME. The common crisis management framework could define the roles and responsibilities of the MAS and the relevant U.S. authorities in crisis scenarios. The crisis management framework should be regularly tested. Such a framework may facilitate effective and timely communication and potentially avoid losses or reduce the size of financial losses following financial or operational crisis events.</p>	

## D. Recommended Actions Regarding CDP

<b>Recommended Actions to Improve Compliance with the CPSS-IOSCO Principles and the safety and efficiency of the financial market infrastructure</b>	
<b>Reference Principle</b>	<b>Recommended Action</b>
2. Governance	<ul style="list-style-type: none"> <li>The possibility of separating the CSD and CCP functions of CDP into two distinct legal entities under the existing holding company structure could be explored.</li> </ul>
3. Framework for comprehensive management of risks	<ul style="list-style-type: none"> <li>It is recommended to extend the number and nature of the scenarios considered in the recovery plan.</li> </ul>
5. Collateral	<ul style="list-style-type: none"> <li>Explore with members the possibility of widening the collateral pool apart from cash and examine the feasibility of receiving a part of the collateral in the form of Singapore government securities, as this would enable CDP to use MAS' standing facility for repo in times of stress.</li> </ul>
6. Margin	<ul style="list-style-type: none"> <li>Further fine tune the margin model for a more effective and efficient margin requirements in various scenarios.</li> </ul>

## E. Recommended Actions Regarding SGX-DC

<b>Recommended Actions to Improve Compliance with the CPSS-IOSCO Principles and the safety and efficiency of the financial market infrastructure</b>	
<b>Reference Principle</b>	<b>Recommended Action</b>
1. Legal risk	<ul style="list-style-type: none"> <li>MAS is encouraged to continue its efforts to mitigate cross-border regulatory risks.</li> </ul>
3. Framework for comprehensive management of risks	<ul style="list-style-type: none"> <li>It is recommended to extend the number and nature of the scenarios considered in the recovery plan.</li> </ul>
5. Collateral	<ul style="list-style-type: none"> <li>Collateral concentration limits can be defined per clearing member, in addition to the current concentration limits that define a maximum threshold per issue.</li> <li>Explore with members the possibility of widening the collateral pool apart from cash and examine the feasibility of receiving a part of the collateral in the form of Singapore government securities, as this would enable SGX-DC to use MAS' standing facility for repo in times of stress.</li> </ul>
6. Margin	<ul style="list-style-type: none"> <li>SGX-DC is encouraged to further reduce the time between the settlement bank confirmation and the</li> </ul>



Reference Principle	Recommended Action
	actual deposit of margin.
9. Money settlements	<ul style="list-style-type: none"> <li>SGX-DC should consider using MEPS+ for direct settlements in Singapore dollar.</li> </ul>
13. Participant-default rules and procedures	<ul style="list-style-type: none"> <li>SGX-DC is encouraged to conduct drills for the exchange traded derivatives and OTC commodities on an annual basis as well.</li> </ul>
20. FMI links	<ul style="list-style-type: none"> <li>The LC should be covered by collateral or replaced in full by highly liquid assets with low credit risk. The SGX-DC clearing fund should not be used to cover potential losses related to the link, as this reduces the resources that the CCP holds to address the risks related to the potential default of clearing members.</li> </ul>

## F. Recommended Actions Regarding MAS

Recommended Actions to Improve Compliance with the CPSS-IOSCO Responsibilities and the safety and efficiency of the financial market infrastructure	
Reference Responsibility	Recommended Action
E. Cooperation with other authorities	<ul style="list-style-type: none"> <li>Adapt MoU with the U.S. authorities by including cooperative crisis management arrangements.</li> </ul>

## G. Authorities' Response to the Assessment

**64. MAS welcomes the assessments on Singapore's implementation of the PFMI, as part of the IMF's Financial Sector Assessment Program.** The assessments provided MAS with the opportunity to review Singapore's regulatory and supervisory framework in respect of FMIs, and allowed for identification of areas for further improvement.

**65. MAS acknowledges the IMF's overall assessment that CDP and SGX-DC are sound and efficient CCPs that comply with the PFMI.** Since the introduction of the PFMI in April 2012, MAS has engaged CDP and SGX-DC in reviewing areas where the PFMI has imposed new or strengthened requirements; and where appropriate, to consider improvements to CDP's and SGX-DC's risk management policies and technology systems. MAS has also reviewed its legislative framework, instituted legislation changes, and published policies to reflect and encompass the PFMI requirements. MAS will continue to work with these FMIs to ensure best practice implementation of the PFMI.

**66. MAS notes the assessors' finding that CDP's and SGX-DC's RRP's should be further developed (Principle 3).** The RRP's have been developed taking reference from the guidance provided under the FSB Key Attributes of Effective Resolution Regimes for Financial Institutions

published in October 2011, which sets out the core elements that are necessary for an effective resolution of financial institutions including FMIs. MAS notes that the FSB and CPSS-IOSCO are currently consulting on the Assessment Methodology for the Key Attributes of Effective Resolution Regimes for Financial Institutions, and the recovery of FMIs respectively. MAS will monitor developments on the international front, and will continue to engage CDP and SGX-DC to further enhance various components of the RRP.

**67. MAS would like to express its appreciation to the IMF and its PFMI FSAP assessors for the assessments.** MAS will thoroughly consider all the recommendations made by the assessors, so as to further reinforce the FMIs' operational policies and practices that are best suited to the context of Singapore's financial markets.

## IAIS INSURANCE CORE PRINCIPLES

### A. Background

**68. This assessment provides an update on the significant regulatory and supervisory developments in the insurance sector of Singapore since 2004. The current assessment is benchmarked against the ICPs issued by the IAIS in October 2012.** The assessment is based solely on the laws, regulations, and other supervisory requirements and practices that are in place at the time of the assessment.

**69. The insurance industry in Singapore has grown to a sizable share of GDP but remains much smaller than the banking sector.** Assets held by insurers are \$165.5 billion or 47.9 percent of GDP while total assets of the (commercial) banks are \$1,957.1 billion or 566.3 percent of GDP as of December 2012. The insurance industry in Singapore is growing; in particular, gross premium of offshore non-life business, which has increased significantly by more than 80 percent in the last five years. The main exposures of offshore non-life insurers arise from providing property reinsurance mainly in South East Asia: Thailand (21 percent), Indonesia (17 percent), South Korea (12 percent), and Malaysia (6 percent) in 2011.<sup>6</sup>

**70. The financial crisis caused a significant shift in life insurance policyholders' appetites from investment linked products to non-linked products, such as participating policies.** Although insurers provide guarantees for non-linked products, current regulatory and supervisory requirements, as well as sound risk management practices in the industry, have kept the guaranteed rates low (currently at between 1–2 percent), and therefore guarantees do not raise any immediate concern.

**71. In life insurance, participating policies with a low guaranteed rate (1–2 percent) represent the dominant product, and insurers have the capacity to absorb significant losses by reducing dividends or bonuses to their policyholders.** Following MAS requirements, technical provisions established by life insurance companies for their participating business include an amount for the present value of future bonus distributions, including bonuses that have already been declared, as well as those appearing in future bonus illustrations. Since the latter are not guaranteed, they can be released as an additional capital buffer in the face of deteriorating economic conditions. A substantial part of the capital resources of life insurance companies represents retained earnings on participating life insurance policies, although it is recognized that those earnings will likely be distributable to policyholders at some future time if favorable conditions persist.

**72. The current expected return (4–5 percent) may not be fully achieved, and insurers might not be able to meet policyholder expectation in the future in a prolonged low interest rate environment.** Relatively high equity exposure, ALM risks, and market deterioration could have an adverse impact on policyholder behavior, such as higher lapse rates or lower renewal at the

<sup>6</sup> The exposures are based on maximum sum insured or limit of liability.

maturity of the current policies. This could cause deterioration in insurers' profitability, solvency and liquidity position in the long term.

**73. In non-life insurers, higher frequency of and loss from catastrophe events are the biggest risks.** In particular, offshore insurers have a high regional concentration on property and casualty risks in the neighboring countries (such as Thailand and Indonesia). In addition, some of the direct insurers have concentrated exposure of reinsurance arrangements with their parent companies. Such arrangements are not subject to concentration limits. However, MAS collects detailed information on the reinsurance arrangements for the direct non-life insurers, and also subjects them to a prescribed insurance-related stress scenario under the annual stress test exercise, whereby default of reinsurers is tested as part of the scenario.

## B. Preconditions for Effective Supervision

**74. The preconditions for effective insurance supervision are in place in Singapore.** The macroeconomic and financial condition of Singapore is generally sound. Real GDP growth and inflation averaged around 6.1 percent and 2.6 percent, respectively, during 2003–12. Household and corporate sector balance sheets remain robust in spite of the recent economic slowdown. Corporate earnings have declined, but corporate sector leverage has remained relatively low, with a median debt to equity ratio of around 0.4 and abundant liquidity. Net household wealth is very high at nearly four times GDP. However, new challenges, such as slowing growth, increasing real estate prices, an increasing number of individual bankruptcies, and inflation, have emerged in recent years.

**75. Accounting and auditing standards adopted in Singapore are in line with international best practices.** The Singapore Accounting Standards are closely modeled after the IFRS. The Accounting Standards Council, established under the Accounting Standards Act, is responsible for formulating the accounting standards. Singapore's Standards on Auditing are modeled after the International Standards on Auditing. The Singapore Actuarial Society establishes professional and ethical standards for its members. There are 591 members as of March 2012 and about half of them are "Fellow," which are qualified as Appointed Actuaries. The Singapore Actuarial Society (SAS) issues the constitution, code of professional conduct, and guidance notes which assist its member actuaries in performing the statutory roles required under the regulatory framework.

**76. Singapore capital markets are at various stages of development, with very deep and liquid foreign exchange markets, while equity and fixed income markets are at an earlier stage of development.** As of 2012, Singapore is the third largest foreign exchange market in the world and one of the largest trading centers for OTC derivatives in Asia. The corporate debt market doubled over the last decade, with an outstanding volume at-end 2011 of S\$203 billion (80 percent of GDP). While the government has taken and is taking several measures to improve the situation, including introduction of a securities lending facility, liquidity of the secondary market remains low.

**77. The population of Singapore is 5.31 million, of whom 62 percent are citizens, while the rest are permanent residents or foreign workers.** While the median age of Singaporeans is 38 years, the total fertility rate was 1.29 children per woman in 2012. As life expectancy is quite long

(males 77.9 and females 82.8), Singapore is facing challenges as one of the fastest aging populations in Asia. By 2030, it is estimated that only 3.5 persons will be supporting one elderly person.

**78. Singapore has established the Central Provident Fund (CPF) for citizens and permanent residents, with contributions by employers and employees.** However, the cumulative impact of three fundamental shifts, falling fertility, increasing longevity, and smaller family size, will mean that CPF members will have to rely on their savings to help fund their retirement. In addition, with living standard increasing with modest inflation, it is generally recognized that additional voluntary savings are necessary. The Singapore Government has introduced tax incentives for saving products (Supplementary Retirement Scheme), including insurance products. However, due to lower income tax rates in Singapore, the incentive seems less effective when compared with other countries with higher income tax rates.

## C. Main Findings

**79. The major regulatory developments since 2004 have been in line with the FSAP recommendations.** These include the introduction of a RBC in 2005, which covers the relevant risks that insurers face (such as credit, market, ALM, and underwriting risks) and has some degree of convergence with Basel II. The framework is currently under review to take into account evolving international best practices. Corporate governance and risk management requirements (such as ERM) have been enhanced significantly. MAS introduced and has improved the sophistication of its risk-based supervisory framework (CRAFT), supported by comprehensive reporting requirements. Policyholder protection funds have been established, with a pre-funded scheme and 100 percent coverage for the guaranteed benefits of life insurance policies, subject to certain caps. For covered general insurance policies, 100 percent coverage is provided without caps. Market conduct regulation has been substantially enhanced, with remarkable efforts made by both MAS and the Singapore industry.

**80. The areas requiring improvement include independence, capital, enterprise risk ERM, and crisis management in light of the emerging risks of the insurance sector.** The necessary actions have been already taken in ERM and appropriate consideration is underway on capital. MAS is advised to enhance its independence by strengthening its safeguards over and above the existing practices and to ensure effective checks and balances against any inappropriate political objectives. In addition, given the material cross border operations in some of the insurers, MAS is encouraged to improve crisis management by requiring large insurers with cross border operations, for which MAS is the group wide supervisor, to prepare contingency plans and procedures for use in gone-concern situation.

**Table 6. Summary of Compliance with the ICPs**

Insurance Core Principle	Comments
<b>1. Objectives, Powers and Responsibilities of the Supervisor</b>	<p>Existing legislation clearly defines MAS as the authority responsible for insurance supervision, and its powers to administer and enforce the enabling legislation for insurance companies and intermediaries in Singapore.</p> <p>Supervisory objectives are clearly defined. MAS has power to regulate and supervise insurance group and all their related entities under the Financial Holding Companies Act, as well as through a series of directives.</p>
<b>2. Supervisor</b>	<p>Legislation provides for MAS to be an operationally independent statutory body. It also affords MAS directors, officers, employees, and others working on its behalf with appropriate legal protection, and requires them to protect confidential information and to adhere to a code of conduct. MAS operations are self-funded and budget decisions have the authority of the President. MAS salaries are competitive with those in the industry, and they have been able to attract mid-career professionals as well as top quality university graduates. MAS staff have earned the respect of industry stakeholders with whom they have contact.</p> <p>While there is no evidence and outcome which suggests lack of operational independence in the current functioning of MAS, we have questioned the independence of MAS from government influence having regard for the fact that a number of the MAS Board of directors are Cabinet ministers.</p>
<b>3. Information Exchange and Confidentiality Requirements</b>	<p>There is an adequate legal and administrative framework in place that allows MAS to exchange information, on entities it supervises, with other supervisors and authorities subject to confidentiality, purpose, and use requirements.</p> <p>MAS is prepared to share confidential information with other supervisors so long as confidentiality is maintained, even in cases where an MoU is not yet in place. However MAS has signed MoUs with several jurisdictions and is a signatory of the multilateral memorandum of understanding (MMoU) created by IAIS.</p>
<b>4. Licensing</b>	<p>MAS is responsible for both the supervision of insurance entities and the issuance of insurance licenses. An entity requires licensing or authorization by MAS before being allowed to carry on any class of insurance business in Singapore. Licensing and authorization requirements and procedures are publicly available in the Insurance Act (Ins Act), various regulations, and on the MAS website.</p> <p>The license application form requests information on the shareholdings of the applicant, the structure of the group, the shareholders of the proposed Singapore insurer, the organization chart of the proposed Singapore insurer, the executives to whom the management of the proposed Singapore insurer will report, and the risk control systems of the proposed Singapore insurer.</p> <p>Relationships between all material entities within the group are shown via a diagrammatic group structure. MAS' standard letter to request information from foreign regulators seeks confirmation from the home regulator that it has no objection to the application.</p>

Insurance Core Principle	Comments
<b>5. Suitability of Persons</b>	
<p>Under the Ins Act, a licensed insurer is required to seek MAS' approval for the appointments of the following key functionaries:</p> <ul style="list-style-type: none"> <li>• substantial shareholders and controllers;</li> <li>• directors and the chairman of the Board (for locally incorporated insurers);</li> <li>• key executive persons such as the chief executive and actuaries; and</li> <li>• auditors.</li> </ul> <p>MAS' approval process takes into account whether the persons are fit and proper. These are set out in MAS Guidelines on Fit and Proper Criteria and include:</p> <ul style="list-style-type: none"> <li>• honesty, integrity, and reputation;</li> <li>• competence and capability; and</li> <li>• financial soundness.</li> </ul> <p>If it is satisfied that the insurer's affairs are conducted in a manner likely to be detrimental to public or policyholders' interests, MAS may also, under section 41 of the Ins Act remove any person whom MAS considers unfit to be associated with the insurer. Section 31 of the Ins Act also provides that MAS may remove a CE, director or actuary if the individual has failed to perform his functions or is no longer a fit and proper person to be so appointed.</p> <p>For actuaries and auditors, during the assessment of the application, consideration is also given to the professional body to which actuaries and accountants belong, and the standards of professional conduct issued by those bodies.</p>	
<b>6. Changes in Control and Portfolio Transfers</b>	
<p>For any proposed acquisition or change in control, new shareholders or beneficial owners are required to meet requirements for financial and non-financial resources similar to those of a new licensee. The Ins Act prescribes that the whole or part of the insurance business of a licensed insurer may only be transferred to another licensed insurer, or to a company applying to be a licensed insurer, if the transfer is effected by a scheme under section 49FB of the Ins Act, or if the transferor has obtained the approval of MAS for such a transfer.</p>	
<b>7. Corporate Governance</b>	
<p>The Regulations and Guidelines of Corporate Governance have been implemented for several years and have improved corporate governance in the insurance sector over time. In April 2013, regulations of corporate governance, which are legally binding, were extended from just applying to the larger insurers, to all locally incorporated insurers and reinsurers irrespective of their size. This requires insurers (including reinsurers) to have independent directors on their boards, establish committees of the boards, and oversee key functions.</p>	
<b>8. Risk Management and Internal Controls</b>	
<p>The notices and guidelines require the key functions to have authority, resources, seniority and direct access to the Board or relevant Board Committees. MAS monitor the effectiveness of the key functions through onsite inspections and offsite monitoring, which are reflected in CRAFT ratings and inspection plans.</p>	
<b>9. Supervisory Review and Reporting</b>	
<p>MAS uses a single framework—Comprehensive Risk Assessment Framework and Techniques (CRAFT) to identify and assess the risks of a financial institution. The CRAFT framework requires MAS to evaluate both the impact and risk of an insurer relative to other insurers, and assigns each company to a respective risk bucket. The risk bucket will then drive MAS' supervisory intensity and</p>	

Insurance Core Principle	Comments
	<p>supervisory plan, including the frequency and scope of onsite inspection and the level of offsite review and monitoring. Supervisors will highlight any concerns to the Board and senior management during regular company visits. The discussion will include a review of MAS' CRAFT assessment of the insurer's key significant activities.</p>
<b>10. Preventive and Corrective Measures</b>	
	<p>MAS has specific and general powers in the Ins Act and the Financial Advisers Act (FAA) to issue directions to insurers and insurance intermediaries for both preventive and corrective measures to achieve supervisory objectives. These actions could include issuing directions to the insurer to raise its capital level, remove key personnel deemed unfit to carry on the role, restrict activities, etc. In the event MAS decides that insurer is no longer viable, the insurer can be directed to cease writing new or renewal business and commence run-off operations. MAS also has the power under section 41A of the Ins Act to take over control and wind up the insurer.</p>
<b>11. Enforcement</b>	
	<p>The Ins Act provides MAS with extensive powers of enforcement. While insurers subject to the enforcement can appeal to the court, it would not delay the process of taking enforcement actions during the course of the appeal. Fund concept, which requires insurers to segregate assets and liabilities with respect to each class of insurance business, strengthens MAS capacity to deal with problem cases.</p>
<b>12. Winding-up and Exit from the Market</b>	
	<p>The Ins Act enables MAS to take a wide range of actions before and during the liquidation process. Priority of claims of policyholders is specifically stated in the Ins Act. The Policy Owners' Protection Scheme, which is pre-funded, specifically establishes the priority of policyholders' claims and provides 100 percent policyholder protection up to certain limits.</p>
<b>13. Reinsurance and Other Forms of Risk Transfer</b>	
	<p>Insurers are required to establish reinsurance management policies approved by the Board. The policy should lay down clear methodologies for identification of tolerance to risk, retention level, types of reinsurance arrangement, and selection of reinsurers. Recognition of reinsurance transactions takes into account reinsurer's licensing status as well as its credit rating. MAS monitors the reinsurance transactions quarterly, using offsite monitoring of outward reinsurance arrangements reported to MAS.</p>
<b>14. Valuation</b>	
	<p>Debt securities, equity securities (including those classified as "available for sale" under the accounting standards), properties, investment linked funds belonging to the policyholders, and derivatives are to be valued at their market values. Loans, outstanding premiums, and reinsurance recoverable are valued based on the principal or amount recoverable outstanding less provision for probable loss. The technical provisions (insurance liabilities) are measured with expected cash flows of the underlying insurance policies using best estimate assumptions. In addition, an explicit provision for adverse deviation (PAD) is added. Valuation of technical provisions (including change of assumption) is endorsed by appointed/certifying actuaries and external auditors and reported to MAS. MAS monitors valuation practice through offsite monitoring and onsite inspections.</p>
<b>15. Investment</b>	
	<p>Although MAS does not set explicit quantitative limits on an insurer's investments, a robust investment policy is required to be in place. Risk-based capital requirements give insurers strong disincentives to invest in particular assets and to avoid excessive concentration. MAS monitors the investment portfolio in detail on a quarterly basis, and communicates with the industry quite intensively based on the detailed analysis.</p>



Insurance Core Principle	Comments
<b>16. Enterprise Risk Management for Solvency Purposes</b>	Stress testing and scenario analysis, which have been conducted by direct insurers for several years, encourage the industry to improve overall risk management gradually. MAS issued the ERM notice, which expanded the stress testing and scenario analysis to cover the reinsurance sector and explicitly requires an ORSA report. MAS conducted a thematic review on ERM, which encouraged the industry to improve its frameworks. The industry is adopting ERM frameworks, and some larger insurers have sophisticated systems in place, while smaller insurers are still at earlier stage of development.
<b>17. Capital Adequacy</b>	MAS has implemented a sophisticated risk-based solvency requirement (RBC) since 2005, which is applicable both at the company level and the fund level. The capital requirements cover most of the relevant and quantifiable risks. However, due to the recent rapid expansion of Singapore offshore market and the global financial crisis, new risk components (such as catastrophe risk) should be incorporated, and other refinements are recommended. MAS is currently conducting a review of the regime (RBC II).
<b>18. Intermediaries</b>	Robust licensing requirements are applied both at the levels of companies and individual representatives. Fit and proper criteria, which include the fulfillment of a minimum number of training hours annually, are required to ensure that the representative's license remains valid. The Ins Act stipulates strong safeguards for client money. These requirements encourage insurers to establish strong training programs for improving quality and compliance of intermediaries.
<b>19. Conduct of Business</b>	Under the Guidelines on Fair Dealing, MAS sets out five Fair Dealing Outcomes. Notices specify the information that must be disclosed. Several channels of dispute resolution are available for policyholders. MAS monitors market conduct practices carefully against its Fair Dealing Guidelines with onsite inspections, offsite monitoring, and mystery shopping. The Financial Advisory Industry Review Panel has been established and has made substantial recommendations to improve industry practices further.
<b>20. Public Disclosure</b>	A wide range of information is publicly available, including B/S, P/L, valuation of life business, participating fund allocations and solvency ratios. However, information on ERM/ALM and Corporate Governance is not yet publicly available on an industry wide basis, although some of the large insurers have disclosed this type of information on their websites or in their annual reports.
<b>21. Countering Fraud in Insurance</b>	The Notices require all insurers, financial advisers and insurance brokers to report all misconduct committed by their representatives to MAS, as well as lodge suspicious activities and incidents of fraud. Many of the training courses and seminars being held are aimed at minimizing the cost to insurers and to society of insurance fraud committed by policyholders, intermediaries, and other third parties. MAS collaborates with police officials and relevant government departments such as the Ministry of Transport, Land Transport authority, the Ministry of Health and the Attorney General's Chambers in an effort to control fraud risks.
<b>22. Anti-Money Laundering and Combating the Financing of Terrorism</b>	Singapore is a member of the Financial Action Task Force (FATF) and of the Asia/Pacific Group on Money Laundering (APG). It underwent its last Mutual Evaluation against the Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) standard in 2008. Overall, assessors found that Singapore had a strong AML/CFT system in place and that life insurers and

Insurance Core Principle	Comments
	intermediaries were subject to adequate AML/CFT requirements and supervision. MAS continues to improve industry awareness with its risk-based framework (CRAFT) and periodic onsite inspections.
	<b>23. Group-wide Supervision</b>
	When dealing with group-wide supervision, MAS relies on a series of notices, directives, and guidelines supported by legislation that provide satisfactory authority to request information, evaluate risks, and assess solvency for insurance groups. Amendments to the Ins Act and the Financial Holding Companies Act were enacted in April 2013. Under the FHC Act, MAS will have powers over the entire FHC group, which includes the financial holding company, its subsidiaries and any other company or entity treated as part of the financial holding company's group of companies according to Accounting Standards. MAS works together with other foreign supervisory authorities where appropriate.
	<b>24. Macroprudential Surveillance and Insurance Supervision</b>
	MAS requires direct life and general insurers to perform bottom-up annual stress testing based on a number of prescribed and self-designed stress scenarios. Vulnerabilities of insurers (and the insurance sector as a whole) to financial market stresses and insurance related stresses are revealed in the stress test exercises. Top-down scenario analyses are also done to identify and uncover specific vulnerabilities of insurers (and the insurance industry as a whole) to various types of financial market and insurance related developments. The Macroprudential Surveillance framework is updated on a quarterly basis, monitoring insurers' interconnectedness and interlinkages with other insurers, the broader financial system, and the real economy.
	<b>25. Supervisory Cooperation and Coordination</b>
	MAS has the power and framework in place for supervising all financial institutions, including locally-incorporated cross-sectoral groups with insurance operations. MAS has established numerous bilateral MoUs with foreign regulators and is also a signatory to the IAIS MMoU since July 2010. MAS officials have been successful in establishing the supervisory college with the major local insurance group. In addition, MAS personnel have been active participants in a number of such colleges established in other jurisdictions
	<b>26. Cross-Border Cooperation and Coordination on Crisis Management</b>
	The MAS participates actively in 11 supervisory colleges on an ongoing basis as a host supervisor, and some of the colleges have started to actively plan for crisis management. MAS has also organized a supervisory college as the home supervisor. The significant insurance group, of which MAS is the home supervisor, had already developed plans for crisis management. The BCM framework has been implemented, and would set up a crisis command centre and communicate with various stakeholders.

**Table 7. Recommendations to Improve Observance of ICPs**

Insurance Core Principle	Comments
2. Supervisor <ul style="list-style-type: none"> <li>MAS should strengthen its safeguards further to avoid any undue political/governmental interference.</li> </ul>	
14. Valuation <ul style="list-style-type: none"> <li>Work with the Singapore Actuarial Society to develop and adopt formal standards that govern the work of the appointed actuary so as to ensure soundness and consistency in valuation practices.</li> </ul>	
16. Enterprise Risk Management for Solvency Purposes <ul style="list-style-type: none"> <li>Complete roll-out of ERM and full implementation of requirements by all players in the industry.</li> </ul>	
17. Capital Adequacy <ul style="list-style-type: none"> <li>Implement RBC II. Ensure that proper provision for catastrophe risks forms part of the requirements to be met by reinsurance companies.</li> </ul>	
20. Public Disclosure <ul style="list-style-type: none"> <li>Assist players in the industry to ensure full implementation of new disclosure requirements in 2014.</li> </ul>	
26. Cross-border Cooperation and Coordination on Crisis Management <ul style="list-style-type: none"> <li>Given the material cross border operations in some of the insurers, work on cross-border crisis management needs to be prioritized. Where MAS is the group wide supervisor, MAS should continue to work with large insurers with cross-border operations so that they develop contingency plans and procedures based on their specific risk for use in a gone-concern situation.</li> </ul>	

## D. Authorities' Response to the Assessment

**81. MAS appreciates the opportunity to be assessed against the IAIS Insurance Core Principles (ICPs).** MAS would also like to express its gratitude to the IMF and its assessors for their understanding and objective assessment of the standards in Singapore. The process has given MAS the opportunity to review and improve its regulatory and supervisory frameworks, and dialogue with the IMF assessors has been constructive in identifying areas for further improvement.

**82. Notwithstanding the IMF's overall assessment that MAS shows a high degree of observance with the IAIS ICPs, MAS will continue to work with the relevant stakeholders to further strengthen the supervision and risk management practices of the insurance industry in Singapore.**

- MAS notes the assessors' observations on the existing safeguards, their recommendations on how MAS' operational independence could be further strengthened, and their finding that there had been no instance where MAS' operational independence was compromised. We reiterate

our position that MAS has operational autonomy in the exercise of its powers and functions. Nonetheless, we will review the assessors' recommendations, and make changes, where necessary, to ensure that it continues to maintain operational independence.

- MAS will continue to work with the Singapore Actuarial Society to enhance the existing professional guidance notes on valuation of liabilities so as to incorporate the best practices with regard to the checks and balances on an actuary's work.
- With respect to ERM, MAS has already issued a notice setting out ERM requirements for the insurance industry. This notice shall take effect on January 1, 2014. MAS will continue to work with the industry to achieve the standards envisaged under the ERM requirements.
- MAS is working on RBC II with a view to improve the comprehensiveness of the risk coverage and the risk sensitivity of the existing RBC framework, and will explore how to incorporate the appropriate risk charges for catastrophe risks.
- With respect to public disclosure, MAS has already issued a notice setting out public disclosure requirements for the insurance industry. MAS will continue to work with and provide guidance where necessary, to enhance the disclosure practices in the industry.
- MAS agrees with the importance of effective cross-border cooperation and coordination on crisis management. MAS looks forward to enhancing our cooperation and coordination on crisis management matters with group wide supervisors of major foreign insurers in Singapore. For the significant groups for which MAS is the group wide supervisor, MAS will continue to collaborate with its host supervisors, as well as the insurance groups, to ensure that crisis management plans are up-to-date, and plans and procedures for use in gone-concern scenarios are developed.

# IOSCO OBJECTIVES PRINCIPLES OF SECURITIES REGULATION

## A. Executive Summary

**83. Compliance with the International Organization of Securities Commissions (IOSCO) Principles is generally high, although the assessors identified some vulnerabilities which need to be resolved.** The MAS' enforcement philosophy as regards securities markets and the financial intermediaries active therein is cogent, outcomes-focused, and well developed. Its enforcement statistics indicate that it has a reasonable success rate in the cases it brings. The Securities and Futures Act (Cap. 289) (SFA) provides an effective framework to enable the sharing of information and cooperation between MAS and foreign regulators on supervisory and enforcement matters. There is a reasonable level of protection of shareholders in Singapore and accounting and auditing standards are high. Singapore devotes considerable resources to ensuring that its standards and their application match global best practice. The regulation of collective investment schemes places strong emphasis on MAS's gatekeeper role, and MAS seeks to ensure that it is well informed about all sectors of this market, including hedge funds managed from and offered for sale in Singapore. Self-regulation by exchanges remains an integral part of the regulatory framework. There are no restrictions on foreign firms operating in Singapore. Since 2007, foreign firms must incorporate in Singapore but there are no restrictions on the type of business they may conduct, and they are regulated under the same requirements as local intermediaries. The retail securities market is an uncomplicated model primarily based around agency trading in the equities market. Most intermediaries retain capital in excess of minimum requirements and the standards of behavior expected of them conform to international standards.

## B. Introduction

**84. An assessment of the level of implementation of the IOSCO Principles in Singapore was conducted from April 3–17, 2013 as part of the FSAP by Martin Kinsky and Richard Britton, both external MCM experts.** An initial IOSCO assessment was conducted in 2002 before IOSCO had developed a detailed methodology for carrying out such assessments. Since then there have been numerous changes to primary and secondary legislation, in which the authorities have sought to ensure that Singapore remains current with global developments in the regulation of securities markets and in conformity with the IOSCO Principles.

**85. MAS acknowledges that potential tensions between its regulatory and developmental roles may exist, but it believes that it has established processes in place to ensure that a proper balance is maintained.**

## C. Information and Methodology Used for Assessment

**86. The assessment was conducted based on the IOSCO Principles and Objectives of Securities Regulation approved in 2010 and the Methodology as updated in 2011.** As has been the standard practice, Principle 38 was not assessed due to the existence of separate standards for securities settlement systems and central counterparties.

**87. The IOSCO methodology requires that assessors not only look at the legal and regulatory framework in place, but also at how it has been implemented in practice.** The assessors relied on: (i) an extensive self-assessment prepared by MAS staff, which included detailed descriptions on the legal basis for the exercise of MAS' powers; (ii) reviews of the relevant legislation and other documents published by MAS and other authorities; (iii) meetings with staff from government authorities: MAS; Accounting and Corporate Regulatory Authority (ACRA); Accounting Standards Council (ASC); Commercial Affairs Department (CAD); and the Securities Industry Council (SIC); and (iv) meetings with the private sector including brokers, fund managers, exchanges, the Alternative Investment Management Association, auditors, the Law Society and the Securities Investors Association of Singapore (SIAS).

## D. Regulatory Structure

**88. MAS is the supervisor and regulator of the financial services sector; it is also the central bank.** It is established under the Monetary Authority of Singapore Act (MAS Act) as a body corporate. The MAS Act sets out the governance and management structure of the MAS and its powers, duties, and functions, including its powers to determine staff hiring and remuneration policies, its duties and functions to act as the central bank, conduct monetary policy, oversee payment systems, and to conduct integrated supervision of the financial services sector. A Financial Sector Development Fund was established under the MAS Act in 1999, controlled and administered by MAS subject to the directions of the Minister-in-charge of MAS, and which has, among its objectives, the development of Singapore as a financial center. MAS is assigned to the Prime Minister's office and the current Minister-in-charge of MAS (and thereby responsible to Parliament for its conduct) is the Deputy Prime Minister, who is also the current Chairman of the MAS Board. In his capacity as the Minister-in-charge of MAS, he is also the person to whom certain decisions of the MAS can be appealed.

**89. Other government appointed bodies have relevant regulatory roles.** ACRA is the body responsible for administering the Companies Act, Business Registration Act, Limited Liability Partnerships Act, Limited Partnerships Act, and supervising public accountants in Singapore. The ASC is the body charged with formulating financial reporting standards for companies, charities, and cooperative societies. The Competition Commission of Singapore has the objective of maintaining and enhancing efficient market conduct, promoting innovation and competitiveness, and eliminating or controlling practices that have adverse effects on competition in Singapore. These roles include intervention in markets supervised by MAS. The SIC administers the Singapore Code on Take Overs and Mergers.

## E. Legal Framework

**90. The principal legislative acts governing the structure and conduct of securities markets and their participants are the Securities and Futures Act (Cap. 289) (SFA) and the Financial Advisors Act (Cap. 110) (FAA).** Further detailed requirements are provided in regulations issued under both acts. The rights of investors in public companies and the duties of directors are contained in the Companies Act (Cap. 50) (CA). Market intermediaries are required to obtain a Capital Market Services License or Financial Adviser's License unless they are exempt by virtue of licensing under another Act administered by MAS, such as the Banking or Insurance Acts. While the concept of providing financial services or offering financial advice is defined very broadly in the legislation, a license is issued for specific itemized activities. A person wishing to operate an exchange or clearing facility or a trading platform is required to seek MAS' authorization.

**91. The legislation provides MAS with statutory power to grant exemptive relief from part or all of the provisions of the SFA. MAS can impose conditions on such relief.** A class order relief must be published but individual relief orders do not have to be published, although MAS has stated that its policy is generally to publish such exemptions. MAS publicly provides its criteria for granting such exemptions and quarterly publishes an anonymized list of such exemptions granted.

## F. Market Structure

### Market Intermediaries

**92. As of end-2012, there were over one thousand market intermediaries supervised by MAS.<sup>7</sup>** The large number of exempt fund managers is progressively declining as they become licensed or registered fund managers, or exit the industry since licensing or registration is now required.

**93. Capital Markets Services licenses are only granted to companies; individuals wishing to conduct a licensed activity for a Capital Markets Services licensee need to be registered as appointed representatives of a licensee.** There are no restrictions on foreign firms operating in Singapore. Since 2006 all new licensees must incorporate in Singapore, but there are no restrictions on the type of business they can conduct and they are regulated under the same requirements as local intermediaries.

**94. There are three exchanges that operate as self-regulatory organizations (SROs).** These are the Singapore Exchange Securities Trading Limited (SGX-ST), Singapore Exchange Derivatives Trading Limited (SGX-DT), and Singapore Mercantile Exchange Pte. Ltd. (SMX). All three are supported by their respective clearing and settlement facilities. SGX-ST and SGX-DT are wholly-owned subsidiaries of Singapore Exchange Limited (SGX). SGX is listed on SGX-ST.

<sup>7</sup> Further to enhancements to the regulatory regime, all "Exempt Fund Managers" had to either register with MAS as a Registered Fund Management Company, or apply for a capital markets services license to conduct fund management by 6 February 2013. Those that fail to do so will have to cease business.

## Collective Investment Schemes

**95. Collective investment schemes in Singapore are relatively small.** Compared to the funds under management on a discretionary basis in Singapore, the assets under management for collective investment schemes (CIS) managed in Singapore are S\$28 billion versus S\$727 billion (in 2010 according to an MAS survey).

## Markets

**96. Singapore has three approved exchanges that conduct SRO functions.** SGX operates an equities market (SGX-ST) (a main and junior market named Catalist) and derivatives market (SGX-DT). SMX operates a derivatives market. While SGX has been operative for some time, SMX has only been in operation since August 2010. SMX was launched on August 31, 2010, with an initial suite of four products. More products were introduced from 2011, and in 2011 and 2012 moderate year-on-year growth occurred.

**97. Exchanges conduct real time surveillance of their markets and are responsible for ensuring that orderly markets are maintained.** There are also about two dozen Recognized Market Operators (RMOs), but only three of them are domestic. These are small markets, with two of the local RMOs operating bond trading platforms and the third trading commodity futures. MAS does not regard RMOs as SROs, although they have legal obligations to operate fair, orderly and transparent markets.

**98. Participants in the financial sector in Singapore characterize the overall market as an uncomplicated model primarily based around agency trading in the equities market.** Little trading as a principal is conducted by exchange members. The capital adequacy maintained by intermediaries is considered to be high because additional capital buffers in excess of the minimum are commonly maintained. Short selling is permitted and largely occurs intraday. Short sales must be tagged, and the aggregate short volume in individual securities is publicly disclosed daily. Contracts for difference (CFD) trading is not conducted on exchanges (no CFDs are listed), but the very limited activity which occurs is conducted privately and directly between market intermediaries and their clients. A similar position applies with respect to bond trading, which is primarily conducted between market intermediaries and their clients. High frequency trading and dark pools are not a prevalent feature in Singapore.

## G. Preconditions for Effective Securities Regulation

**99. Singapore is a republic and has a parliamentary government based on the Westminster model.** The Constitution is the supreme law of Singapore and lays down the framework for the three organs of state: the Executive, the Legislature and the Judiciary. The Legislature comprises the President and Parliament and is the legislative authority responsible for enacting legislation.



## Alternative dispute resolution

**100. Other than formal legal proceedings in court, there are other avenues for the resolution of disputes.** Common forms of alternate dispute resolution in Singapore include arbitration, mediation, and adjudication. MAS also requires all financial institutions that have dealings with retail consumers to be members of an approved dispute resolution scheme. The Financial Industry Disputes Resolution Centre Ltd. (FIDReC) is such an alternative dispute resolution scheme set up to provide an affordable dispute resolution mechanism between consumers and financial institutions. It is an approved dispute resolution scheme under the MAS regulations on dispute resolution schemes (2007).

## Business laws

**101. The Companies Act (Cap. 50) deals with all company related matters, from incorporation, ongoing requirements, and also the winding up of companies.** Singapore also has a Business Registration Act (covering certain businesses that are not organized as corporate entities), a Limited Liability Partnership Act, a Limited Partnership Act, and a Business Trust Act giving a wide range of entities through which commercial activities may be conducted. Insolvency and bankruptcy laws are mainly set out in the Companies Act (Cap. 50) and the Bankruptcy Act (Cap. 20). In addition, there are some provisions in the SFA, Banking Act, and Insurance Act that deal with the winding up of regulated financial institutions.

**102. Singapore's legal system comprises both statutory laws and the common law legal system.** Contractual principles have their roots in English common law. One feature of the common law system is the existence of a dual ownership of property. Ownership of property can be divided into a legal interest and an equitable interest. A trust is based on the concept of legal and equitable ownership and the alienation of property. There is no central registry for the registration of trusts in Singapore. However, under the Trust Companies Act (Cap. 336), a person who wishes to carry on trust business as defined under the Act must be licensed under the Act as a licensed trust company and be subject to regulation by MAS. Under the SFA, MAS will require, as a condition for authorization, a unit trust to have a trustee approved under section 289 of the SFA.

## Auditing and accounting

**103. Singapore's accountancy sector is well-developed and is built on international accounting standards and rules.** Accounting and auditing standards and their enforcement are assessed under Principles 18–21 of this report.

## H. Main Findings

**104. Principles relating to the regulator.** The MAS operates to a high standard overall. There are concerns regarding its independence from government, most notably in the composition of the Board, and the transparency of some elements of regulatory decision making and appeals. The Code of Conduct for staff imposes high standards of personal conduct. On other matters, systemic risk, policing of the perimeter of regulation, and conflicts of interest, the Capital Markets Group (CMG) of MAS, which has supervisory responsibility for capital markets and capital market intermediaries, meets IOSCO requirements. Within MAS, at the time of the assessment, the Financial Supervision Group (FSG) had a professional head count of 496. Within FSG, the Banking and Insurance Group has 229, Policy, Risk and Surveillance Group has 91, and CMG has 176.

**105. Principles for self-regulation.** The only SROs in the jurisdiction are the three approved exchanges. Their self-regulatory functions are to establish rules on eligibility (admission of members), trading, business conduct and qualification, disciplinary actions, and compensation arrangements for investors who suffer loss due to the defalcation or insolvency of members. They also conduct real time front line market surveillance and inspection of members. Suspicious market activity is referred to MAS for action. Exchanges may conduct disciplinary action against their members for breaches of their rules. SGX is responsible for approving listings of initial public offerings (IPOs), but MAS must review and register any prospectus (offer of securities) relating to an IPO. In respect of the listing of derivatives products on SGX and SMX, as required under SFA section 29, MAS has approved each contract specification before permitting trading.

**106. Principles for the enforcement of securities regulation.** MAS has a reasonable record in prosecuting cases of breaches of securities law in the civil courts and, in cooperation with the CAD and the Attorney General's Chambers (AGC), its success rate in the criminal cases it brings is high. It has an extensive suite of supervision, inspection, surveillance, and sanctioning powers. Its enforcement philosophy is thoughtful and coherent. MAS has made a considerable investment in investor education and, in terms of achieving outcomes which support its regulatory objectives, MAS believes this makes an important contribution to enabling retail investors to better protect themselves.

**107. Principles for cooperation in regulation.** MAS has the authority to share confidential regulatory information with domestic and foreign regulators, although there are some statutory requirements that must be met. MAS is a full signatory to the IOSCO MMoU (since October 2005) and it is permitted to share information with a bona fide foreign regulator even if that regulator is not a MMoU signatory. MAS regularly provides information on a timely basis to foreign regulators.

**108. Principles for issuers.** Through a combination of CA requirements, SFA legislative and regulatory requirements enforced by MAS, and SGX Listing Rules, public companies in general and listed companies in particular are subject to detailed standards of accurate disclosure in prospectuses, annual and other periodic reports, and via the continuous disclosure regime. There are weaknesses in the timeliness required of some corporate disclosures when considered in the context of emerging global standards and in the enforcement of high standards of corporate governance on

unlisted public companies. Monitoring of compliance with and enforcement of the CA by ACRA is appropriately resourced and motivated. Although the 14 days' notice for an annual general meeting (AGM) is short by developing international standards, the provision that this must be extended to 21 days when a special resolution is to be voted upon mitigates the problem to some extent, as does the extensive use of the websites of MAS and SGX to publish notices and other information. The control of takeovers and other change of control transactions appears to work well and protects the interests of minority shareholders. Accounting standards are determined, implemented, and interpreted by a body, the ASC, which acts in the public interest. The ASC has issued the Singapore Financial Reporting Standards, which are based on IFRS with a small number of modifications to take into account local economic and business circumstances and context. These are not material to the assessment.

**109. Principles for auditors, credit rating agencies, and other information service providers.**

Singapore has adopted auditing standards fully based on international standards. Auditors must be independent of the firms they are auditing. Audit standards are overseen by ACRA, which was formed in 2004 as a statutory board comprising not more than 15 senior professionals, of which one member must be a public accountant and one member a non-practicing accountant both nominated by the Institute of Certified Public Accountants (ICPAS). ACRA has prescribed a code of ethics based on the code issued by the International Federation of Accountants. Participation in ACRA's Practice Management Program (PMP) (inspections of audits of financial statements) is a condition for a continued right to practice. If the PMP identifies a failure to comply with standards, remedial action will follow. If the failure is serious or repeated, restrictions on practice, including suspension or cancellation, will result. Since 2012, credit rating agencies (CRAs) operating in Singapore must be licensed by MAS or recognized (if operating from a foreign location), regardless of whether ratings are to be used for regulatory purposes. MAS has issued a code of conduct with which credit rating agencies (CRAs) must comply.<sup>8</sup> Any person providing research advice must be licensed as a financial adviser.

**110. Principles for collective investment schemes.** All CIS operators domiciled in Singapore must be licensed by or registered with MAS. They are subject to conduct of business, capital, and organizational requirements. Enhancements to the regulatory regime are currently being introduced. The MAS requirements and processes for approving CIS are modeled specifically on the equivalent regime for issuers. CIS offered to accredited investors (essentially high net worth individuals) and institutional investors (essentially regulated financial institutions) are exempt from prospectus requirements, the Code on Collective Investment Schemes, and investment guidelines. MAS has a comprehensive system for admitting foreign domiciled schemes that are offered for sale to retail investors and a notification regime, with conditions attached, for schemes offered to accredited

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<sup>8</sup> The Code of Conduct for CRAs (the CRA Code) is based on IOSCO requirements of Principle 22. These include: (i) quality and integrity of the rating process; (ii) independence and avoidance of conflicts of interest; (iii) transparency and timeliness of ratings disclosure; and (iv) treatment of confidential information.

investors and institutional investors. The net effect is that MAS is fully informed and can also maintain its gatekeeper role on all operators (and their funds) seeking to do business (management or offering, locally or remotely) in Singapore. There are currently no hedge funds identified as CIS offered to retail investors in Singapore. This appears to be for commercial and not regulatory reasons.

**111. Supervision of CIS operators should be strengthened.** Once the transition to a more comprehensive licensing system for fund management companies has been completed there should be a greater emphasis than was the case before the transition period on more frequent in-depth onsite inspections of operators. Although the system places great reliance on the performance of approved trustees for unit trusts, in the last four years MAS had inspected each of the two largest approved trustees (which handle about 76 percent of Singapore domiciled CIS) only once and has conducted a supervisory visit on one other. There is a case for re-examining the risk assessment of some CIS operators, such as those operating hedge funds of a size which, as a group, may create the potential for systemic risk and excessive market volatility, although that is not the case at present according to MAS's latest survey.

**112. Principles for market intermediaries.** Dealing and advisory activities require a capital markets services or financial adviser's license. Capital, track record, and fitness and propriety are key requirements for a license. Applicants must be able to demonstrate adequate arrangements for managing conflicts of interest, internal controls. They must also establish risk and compliance monitoring functions and maintain professional indemnity insurance. Minimum capital requirements must be met initially and on an ongoing basis. Direct market access to markets is permitted subject to risk management and other appropriate controls. Client money must be deposited in a separate trust account and not be co-mingled with the intermediaries' own funds. Regular reporting to MAS is required, with monitoring by the exchanges.

**113. Principles for the secondary markets.** Two market types are permitted: (i) approved exchanges and (ii) RMOs. Licensing requirements are applicable to both types. Applicants must be fit and proper to conduct operations, maintain capital, and have rules to ensure they conduct fair, orderly, and transparent markets. They also must monitor the conduct of their members. Access to the markets they run must be fair, and they must comply with MAS requirements for conducting their operations. The requirements for an approved exchange are more extensive than those for an RMO owing to the limited nature of the markets that are maintained by RMOs, and because they are mainly based offshore.

**Table 8. Summary Implementation of the IOSCO Principles—Detailed Assessments**

Principle	Comments
<b>Principle 1. The responsibilities of the Regulator should be clear and objectively stated.</b>	
	MAS' responsibilities, powers and authority over capital market activities are set out in detail in the SFA, the FAA, and the respective subsidiary legislation.
<b>Principle 2. The Regulator should be operationally independent and accountable in the exercise of its functions and powers.</b>	
	The assessors have not heard, read or seen anything to indicate that, to date, political, or commercial influence has been used to affect the exercise by MAS staff of their powers and responsibilities. However, the composition of the MAS Board potentially exposes MAS decision making structures and processes on operational matters to interference from senior politicians, or at the very least to the public perception that this could be so. In practice, there are several checks and balances which limit this possibility, as set out in the Code of Conduct for Board members and the operational policy manual for staff. Other matters reflected in this rating are the President's discretionary power to refuse to appoint any person as Chairman, Director, or Managing Director of MAS, or to revoke any such appointment if the President does not concur with the recommendation of the Cabinet or Public Service Commission; the minister's power to call for information on MAS' duties and functions (without any further narrowing of those broad based terms); and the minister's power to appoint inspectors to investigate matters which are the responsibility of MAS.
<b>Principle 3. The Regulator should have adequate powers, proper resources and the capacity to perform its functions and exercise its powers.</b>	
	Within the annual budget allocation for financial supervision, the Capital Markets Group (CMG) receives funding appropriate to its responsibilities and the size and complexity of the market. On a head count basis, the CMG appears to have the necessary resources relative to the other supervisory groups and the scope and size of the various tasks it is required to undertake.
<b>Principle 4. The Regulator should adopt clear and consistent regulatory processes.</b>	
	MAS' policies and procedures for policy formulation and wide consultation before implementation are of a high standard. There are concerns over procedural fairness in the appeals procedures from those decisions by MAS staff, which have a significant impact on individuals and firms.
<b>Principle 5. The staff of the Regulator should observe the highest professional standards, including appropriate standards of confidentiality.</b>	
	The staff code meets the IOSCO requirements concerning personal and familial dealings. Confidentiality requirements are mandated by legislation (Official Secrets Act and the Statutory Bodies and Government Companies (Protection of Secrecy) Act. The familial dealing restrictions may be difficult to enforce, as MAS realizes, but the sanction of the staff member possibly losing his or her job (or worse) in the event of a discovered breach is strongly dissuasive. Comprehensive enforcement procedures are in place.
<b>Principle 6. The Regulator should have or contribute to a process to monitor, mitigate and manage systemic risk, appropriate to its mandate.</b>	
	As part of an integrated regulator and central bank, the CMG has been part of the process of monitoring, mitigating, and managing systemic risk for some considerable time, unlike many stand-alone securities regulators. As such, it appears to have well developed processes to contribute to the work of MAS in this area. MAS gave several examples which demonstrate that securities market developments that might become sources of systemic risk have been identified early and the appropriate analytical and supervisory measures have been taken. In at least one case (over-the-counter—OTC derivatives clearing), legislative change has been secured to ensure that MAS has the appropriate powers.

Principle	Comments
<b>Principle 7. The Regulator should have or contribute to a process to review the perimeter of regulation regularly.</b>	MAS has clearly identified and publicly enunciated the need to ensure that its regulation remains appropriate to market developments, and that this includes monitoring the arrival of new products and new ways of providing financial services which might, by accident or design, fall just outside current regulatory scope. Mechanisms that seek to ensure that MAS remains alert to these changes domestically and internationally are effective, and it has few problems in securing timely legislative and regulatory change when it deems it necessary.
<b>Principle 8. The Regulator should seek to ensure that conflicts of interest and misalignment of incentives are avoided, eliminated, disclosed or otherwise managed.</b>	Requirements for the management of conflicts of interest are a key part of the regulatory framework for all regulated entities under the supervision of the CMG. In collaboration with SGX, CMG also addresses the need for listed issuers to disclose and where necessary take steps to mitigate conflicts of interest.
<b>Principle 9. Where the regulatory system makes use of Self-Regulatory Organizations (SROs) that exercise some direct oversight responsibility for their respective areas of competence, such SROs should be subject to the oversight of the Regulator and should observe standards of fairness and confidentiality when exercising powers and delegated responsibilities.</b>	MAS relies on approved exchanges to conduct market surveillance, and it expects them to exercise responsibilities in respect to the conduct of the market and their members and enforce their rules to set standards and promote investor protection. These responsibilities are set out in law and MAS monitors their compliance with these obligations. MAS does not delegate any of its responsibilities to the exchanges, except with respect to prospectus approvals on SGX's Catalist market (emerging companies).
<b>Principle 10. The Regulator should have comprehensive inspection, investigation and surveillance powers.</b>	MAS has a comprehensive suite of inspection, investigation, and surveillance powers. There is no legal impediment to MAS conducting onsite inspections without notice. Inspections can be made on a routine basis or "for cause." In addition, regulated entities are required to maintain relevant books and information for a period of not less than five years. These must contain sufficient detail to explain the transactions and financial positions of its business, and must include customer details and other particulars. Day-to-day surveillance of trading activity is conducted by the approved exchanges, under the supervision of MAS. Any person is required to provide MAS with information or produce books relating to any matter under investigation at a specified time and place. MAS is empowered to obtain a search warrant from a magistrate. An accompanying police officer is not required in the conduct of a search.
<b>Principle 11. The Regulator should have comprehensive enforcement powers.</b>	The lack of an administrative power to issue fines for breaches of provisions which fall short of the right or need for MAS to go the court under civil penalty proceedings is an omission when considered internationally. MAS argues that the use of its composition powers, which are not necessarily limited to cases for which a civil penalty is available, can be as small as S\$500, and which require an admission of liability, is a more effective deterrent mechanism for penalizing low significance breaches than a specific power to fine under administrative procedures, which would entail providing a mechanism for appeals. Based on the cases presented, the assessors accepted the merit of this argument. Reprimands are not required to be published. However, MAS' policy is generally to publish reprimands for market misconduct, including the circumstances justifying the reprimands.

Principle	Comments
<b>Principle 12. The regulatory system should ensure an effective and credible use of inspection, investigation, surveillance and enforcement powers and implementation of an effective compliance program.</b>	Gaps were identified under the two main supervisory focused Principles, 24 (CIS) and 31 (Intermediaries). The cycle of detailed onsite inspections has been assessed as insufficiently frequent, particularly for entities rated as high or medium high risk in the risk based assessment process. On the positive side, MAS' enforcement philosophy is cogent, coherent, and well developed. Its enforcement statistics indicate that it has a good success rate in the cases it brings.
<b>Principle 13. The Regulator should have authority to share both public and non-public information with domestic and foreign counterparts.</b>	MAS has the legal authority to share public and nonpublic information with domestic and foreign regulators.
<b>Principle 14. Regulators should establish information sharing mechanisms that set out when and how they will share both public and non-public information with their domestic and foreign counterparts.</b>	MAS has entered protocols with the CAD (conduct of criminal investigations) and the AGC (conduct of prosecutions). MAS became a full signatory to the IOSCO MMoU in 2005.
<b>Principle 15. The regulatory system should allow for assistance to be provided to foreign Regulators who need to make inquiries in the discharge of their functions and exercise of their powers.</b>	MAS assists foreign regulators where their requests fall inside of its legal authority to provide confidential information. In rare cases where the requests fall on the borderline, MAS consults with the relevant foreign regulator to clarify the request taking into account the spirit, intent, and provisions of the IOSCO MMoU.
<b>Principle 16. There should be full, accurate and timely disclosure of financial results, risk and other information that is material to investors' decisions.</b>	Through a combination of Companies Act requirements, SFA legislative and regulatory requirements enforced by MAS, and SGX Listing Rules, public companies in general, and listed companies in particular are subject to detailed standards of accurate disclosure in prospectuses, annual and other periodic reports, and via the continuous disclosure regime. There are weaknesses in the timeliness required of some corporate disclosures when considered in the context of emerging global standards.
<b>Principle 17. Holders of securities in a company should be treated in a fair and equitable manner.</b>	Monitoring of compliance with and enforcement of the CA by ACRA is appropriately resourced and motivated. Although the 14 days' notice for an AGM is short by international standards, the provision that this must be extended to 21 days when a special resolution is to be voted upon mitigates the problem to some extent, as does the public availability of announcements and related documentation on the MAS and SGX websites. The control of takeovers and other change of control transactions works well and protects the interests of minority shareholders. MAS recognizes the practical problems in establishing the identity of beneficial owners when those owners seek to obscure their identity through, for example, passing ownership through a chain of offshore companies. The recently increased penalties for non-disclosure provide an effective deterrent.
<b>Principle 18. Accounting standards used by issuers to prepare financial statements should be of a high and internationally acceptable quality.</b>	The development, interpretation, and enforcement of accounting standards has been undertaken by an



Principle	Comments
	independent body acting in the public interest for six years. In terms of local modifications of the International Financial Reporting Standards (IFRS) to meet local conditions, there is a general consensus that the differences are few. There appear to have been some changes to meet the needs of banks, which is not uncommon globally, such as in the EU. These are not material to this principle.
<b>Principle 19. Auditors should be subject to adequate levels of oversight.</b>	ACRA oversees the maintenance of auditor standards via a mandatory statutory periodic audit inspection program. International audit standards apply. Failure to comply with the auditing standards would result in consequences ranging from remedial programs to restrictions on the ability to provide audits and suspension, and cancellation of a public accountant's license
<b>Principle 20. Auditors should be independent of the issuing entity that they audit.</b>	A Code of Professional Conduct Standards and Ethics setting out standards for independence is part of the legislation regulating accountants.
<b>Principle 21. Audit standards should be of a high and internationally acceptable quality.</b>	Auditing and assurance standards are equivalent to international standards.
<b>Principle 22. Credit rating agencies should be subject to adequate levels of oversight. The regulatory system should ensure that credit rating agencies whose ratings are used for regulatory purposes are subject to registration and ongoing supervision.</b>	Since 2012, all CRAs require a capital markets services license (irrespective of whether their ratings are used for regulatory purposes). CRAs must comply with MAS's CRA Code of Conduct (which is based on this IOSCO principle), including keeping records and the management and disclosure of conflicts of interest.
<b>Principle 23. Other entities that offer investors analytical or evaluative services should be subject to oversight and regulation appropriate to the impact their activities have on the market or the degree to which the regulatory system relies on them.</b>	Analytical and sell side analysts are required to be licensed as financial advisers, and their reports are subject to the same requirements as applicable to all holders of a Financial Advisers license
<b>Principle 24. The regulatory system should set standards for the eligibility, governance, organization and operational conduct of those who wish to market or operate a collective investment scheme.</b>	The regulatory requirements of authorization, recognition, and notification enables MAS to be well informed about the size and structure of the CIS industry in Singapore and to develop reasonably accurate metrics concerning the risk, systemic and otherwise, inherent in the business. The exercise of the gatekeeping function is rigorous as regards operators and overseas schemes. Once an operator (or scheme) is inside the perimeter, the supervisory approach relies heavily on periodic reporting, desk-based surveillance, limited scope company visits, and the deterrence impact of the requirement for licensing of individuals, and MAS's other enforcement activities. In-depth onsite inspections are not sufficiently frequent, particularly of operators rated high or medium high risk and approved trustees of unit trusts. The resources for onsite inspections have been limited owing to the demands of a large licensing project that should be completed by mid 2013.
<b>Principle 25. The regulatory system should provide for rules governing the legal form and structure of collective investment schemes and the segregation and protection of client assets.</b>	In the unit trust model as adopted in Singapore, the role of the approved trustee is critical. A major failure would damage Singapore's reputation for probity and efficiency. The criticism of the intensity of MAS' onsite inspection of approved trustees set out in P24 is equally valid here.
<b>Principle 26. Regulation should require disclosure, as set forth under the principles for issuers, which is necessary to evaluate the suitability of a collective investment scheme for a particular investor and the value of the investor's interest in the scheme.</b>	



Principle	Comments
	MAS describes the securities offering regime as “predominantly disclosure based.” MAS also imposes an array of disclosure requirements, through detailed prospectus specifications, Product Highlights Sheets, and periodic reports with extensive operational requirements, as required by IOSCO Principles.
<b>Principle 27. Regulation should ensure that there is a proper and disclosed basis for asset valuation and the pricing and the redemption of units in a collective investment scheme.</b>	
	MAS has robust requirements for requiring the disclosure of the valuation of assets of CIS, any changes in valuation methodology, and the calculation of pricing and redemption of units. The obligations it imposes on CIS operators (and trustees) in the mechanisms they must adopt to make such valuations are rigorous and include provisions in the difficult area of the pricing of unquoted or illiquid assets. These include the test that must be applied when selecting third party valuers.
<b>Principle 28. Regulation should ensure that hedge funds and/or hedge funds managers/advisers are subject to appropriate oversight.</b>	
	MAS processes and requirements meet the standards set out under this principle with respect to authorization/registration and regulation of those who wish to operate hedge funds, allowing the regulator to get an overall picture of the risks posed by each hedge fund and in timely disclosure to investors. However, ongoing supervision has some vulnerability in the area of onsite inspections.
<b>Principle 29. Regulation should provide for minimum entry standards for market intermediaries.</b>	
	Dealing and advising (and other defined business of financial intermediaries) require a Capital Markets Services or Financial Adviser’s license. Applicants must be “fit and proper.” Entry requirements include minimum base capital, track record, operation of appropriate risk, compliance monitoring systems and maintenance of professional indemnity insurance.
<b>Principle 30. There should be initial and ongoing capital and other prudential requirements for market intermediaries that reflect the risks that the intermediaries undertake.</b>	
	Licensees must maintain minimum capital requirements at all times. The financial resources required vary according to their risks and the nature of the license. MAS and the exchanges require compliance with these obligations.
<b>Principle 31. Market intermediaries should be required to establish an internal function that delivers compliance with standards for internal organization and operational conduct, with the aim of protecting the interests of clients and their assets and ensuring proper management of risk, through which management of the intermediary accepts primary responsibility for these matters.</b>	
	Licensees must observe MAS’s Guidelines on Risk Management Practices. They must have written policies for risk management and conflicts of interests, internal control and compliance functions. Clients are protected by “know your customer” obligations, and their assets are not to be comingled with the intermediary and are protected by trust account requirements. They are subject to ongoing supervision by MAS and exchanges of which they are a member. The downgrade arises from the gaps identified under Principles 12 (Enforcement) and 24 (CIS).
<b>Principle 32. There should be procedures for dealing with the failure of a market intermediary in order to minimize damage and loss to investors and to contain systemic risk.</b>	
	MAS has up to date procedures for dealing with intermediary failure, and has been proactive in conducting simulation exercises to familiarize staff with them.
<b>Principle 33. The establishment of trading systems including securities exchanges should be subject to regulatory authorization and oversight.</b>	
	The establishment of new regulated markets (approved exchanges or recognized market operators) requires MAS’ approval and compliance with licensing criteria. Ongoing compliance with the obligations required of the conduct of markets is overseen by MAS.

Principle	Comments
<b>Principle 34. There should be ongoing regulatory supervision of exchanges and trading systems which should aim to ensure that the integrity of trading is maintained through fair and equitable rules that strike an appropriate balance between the demands of different market participants.</b>	MAS has a suite of supervisory tools that it uses in its ongoing monitoring of compliance by regulated markets with the obligations of law and their license. Exchanges conduct real time market surveillance, and they refer instances of market misconduct to MAS for investigation. MAS conducts on and off site oversight of regulated markets.
<b>Principle 35. Regulation should promote transparency of trading.</b>	Exchanges are required to maintain “fair, orderly, and transparent” markets. OTC trading in listed securities in Singapore, other than reportable large transactions conducted by an exchange intermediary pursuant to the exchange's rules, is insignificant. MAS is implementing the recommendations of the G20 concerning OTC derivatives. There is a very small amount of trading in “dark pools.”
<b>Principle 36. Regulation should be designed to detect and deter manipulation and other unfair trading practices.</b>	Civil monetary and criminal sanctions can be imposed for unfair market practices (market and price manipulation, insider dealing, and front running and wrongful acts). Such sanctions have been imposed by the court on civil penalty actions brought by MAS in court and prosecutions by the AGC in respect of unfair practices.
<b>Principle 37. Regulation should aim to ensure the proper management of large exposures, default risk and market disruption.</b>	Large exposures, market disruption and default risk are regulated by the exchanges and MAS via early warning, default procedures, and market disruption rules. Short selling is permitted but is monitored and disclosed to the market.
<b>Principle 38. Securities settlement systems and central counterparties should be subject to regulatory and supervisory requirements that are designed to ensure that they are fair, effective and efficient and that they reduce systemic risk.</b>	Not assessed.

**Table 9. Recommended Action Plan to Improve Implementation of the IOSCO Principles**

Principle	Recommended Action
	<p>Principle 2. The President's discretionary power to refuse to appoint any person as Chairman, Director, or Managing Director of MAS or to revoke any such appointment if the President does not concur with the recommendation of the Cabinet or Public Service Commission should be reconsidered, as should the minister's power to call for information on MAS' duties and functions (without any further narrowing of those broad based terms); and the minister's power to appoint inspectors to investigate matters which are the responsibility of MAS. The core principles of the Code of Conduct for MAS Board members should be set out on the MAS website in order to provide the public with confidence that Board members are required to adhere to high standards of personal conduct in the performance of their duties.</p>
	<p>Principle 4. In order to be consistent with good practice in most developed market jurisdictions which operate under common law principles, MAS should permit those subject to a negative decision to present their case in person. Subsequent appeals to the minister should be replaced with a more demonstrably independent process prior to judicial review by the court. Alternative solutions are either the minister surrenders his right to reject the advice of the Appeal Advisory Committee or, preferably, that the Committee is brought "in house" to MAS, its decisions are final (subject to judicial review), and the minister is no longer involved in making these decisions.</p>
	<p>Principle 9. Encourage approved exchanges to publish promptly the outcomes of regulatory actions taken against their members, including identifying the parties involved and the behavior being sanctioned.</p>
	<p>Principle 11. The lack of an administrative power of MAS to issue fines should be kept under review and change sought if the current arrangements prove inadequate for effective and proportionate enforcement.</p>
	<p>Principle 12. MAS should increase the frequency of in-depth inspections of CIS and other intermediaries with a high or medium high risk rating, as set out in Principles 24 and 31. It should increase its supervision of the main CIS trustees. It should also carry out more random detailed inspection visits on lower rated entities, as well as intensifying thematic visits, mystery shopping, etc. to remind firms that breaches of market conduct or selling practices requirements may have consequences even if clients do not complain to MAS.</p>
	<p>Principle 16. MAS should consider imposing an obligation on unlisted public companies which use the prospectus exemption provision to notify MAS of the offer, the funds raised, and the number and type of new shareholders who accepted the offer. Reliance on moral suasion exerted by ACRA on unlisted public companies regarding specific and timely disclosure should be replaced with a statutory requirement. MAS should subject monitoring and enforcement of SGX's continuous disclosure obligations by the exchange and its reliance on private warnings to greater scrutiny.</p>
	<p>Principle 17. Although the disclosure of shareholdings and changes in holdings by directors and CEOs is consistent with global practice as established by IOSCO, MAS should extend this to senior managers rather than, as at present, subjecting them only to the general 5 percent shareholding disclosure rule applicable to all shareholders. The assessors support setting out the bankruptcy and insolvency provisions in a separate act, as is currently under consideration.</p>
	<p>Principle 19. ACRA should now make detailed transparency available of the outcome of its PMP reviews at the individual level of those who do not fully satisfy ACRA's requirements, including the nature of the conduct and the names of the parties which engaged in the conduct where weaknesses do not justify suspensions and cancellations.</p>

<b>Principle</b>	<b>Recommended Action</b>
Principle 20.	Correct the gap in the law that permits the Public Accountants Oversight Committee (PAOC) to impose monetary penalties following a complaint but not following the outcome of a PMP.
Principle 24.	In-depth onsite inspections of CIS operators should be increased in frequency, particularly of operators rated high or medium high risk, and also of approved trustees of unit trusts. MAS should take steps to ensure that those who have not applied for licensing or registration (or who have been declined by MAS) under the new enhanced regulatory regime for fund management companies actually exit the industry (or obtain legitimate employment at other licensed or registered entities).
Principle 27.	In view of the possibility of conflicts of interest and abuse when pricing unquoted or illiquid assets, as demonstrated by cases in other jurisdictions, MAS should consider reviewing current market practice and, based on its findings, consider whether enhancements to the regulatory requirements are necessary.
Principle 28.	As discussed in Principles 12 and 24 as regards CIS generally, MAS should increase the frequency of onsite inspections of operators of hedge funds and consider whether any hedge fund operators rated below High Risk in the risk based supervision framework should be up-rated.
Principle 29.	Reconsider use of MAS policy which permits it to not disclose publicly the imposition of sanctions against individual institutions on the basis that "they are best dealt with in confidence or if the disclosure of regulatory actions could be viewed as unfair or unduly prejudicial to the subject of the action" (MAS Approach for Publishing Market Conduct Regulatory Actions- 2004) because it may harm the future turnover of the institution. Publicly confirm that sanctions which are to be unpublished will only be used in extraordinary cases and not because of reputational impact or alteration of the public perception of the prior good record of the intermediary in the local community that could result from the publicity.
Principle 31.	Increase the frequency (cycle) of full MAS inspections of licensed intermediaries in its inspection program, particularly for entities ranked as high risk or medium/high risk.
Principle 34.	Encourage the commencement of an ongoing dialogue hosted by MAS involving SGX and SMX about emerging developments in the markets and the Singapore financial sector, including the sharing of information about the risks and exposures of clearing members common to both exchanges.
Principle 37.	Lower the current threshold for reporting by exchange members of large exposures to customers, currently set at exceeding 20 percent of Average Aggregate Resources of the intermediary.

## I. Authorities' Response to the Assessment

**114. The Singapore authorities welcome the assessment of Singapore's implementation of the IOSCO Objectives and Principles of Securities Regulation, as part of the IMF's FSAP.** The comprehensive review of Singapore's regulatory and supervisory framework for securities regulation allowed the authorities to engage in useful discussions on further enhancements to the framework. The authorities are committed to meeting international standards and best practices, and view this as one of the key components when reviewing the regulatory framework.

**115. The authorities acknowledge the IMF's overall assessment of a generally high level of compliance with the IOSCO Objectives and Principles of Securities Regulation, and note there are some areas that could be improved.** The authorities have taken steps towards implementing some of the IMF's recommendations. ACRA is reviewing key areas of the Accountants Act such as transparency of audit inspections and imposition of financial penalties, to help enhance audit quality and ensure auditor accountability. MAS will also review how it may provide clarity on the Minister-in-charge's power to appoint inspectors under section 151 of the SFA.

**116. MAS notes the assessors' finding that there had been no instance where MAS' operational independence was compromised (Principle 2).** MAS reiterates the fact that it has operational autonomy in the exercise of its powers and functions. The assessors have also observed that MAS has existing checks and balances to ensure operational independence. MAS will keep these checks and balances under review to ensure that it continues to maintain operational independence.

**117. Notwithstanding the above, the assessors had commented that the President's discretionary power to refuse to appoint any person as Chairman, Director or Managing Director of MAS, or to refuse to revoke any such appointment if the President does not concur with the recommendation of the Cabinet or Public Service Commission, was an issue in the assessment of Principle 2, with regard to due process. In this connection, MAS wishes to make two clarifications.** First, the President of Singapore, who is independent of any political party, is elected in a separate Presidential Election from that of the Parliamentary Election (where Members of Parliament are elected and from which the Government is formed). Second, the President's decision could be challenged by Parliament. Parliament may, by way of a resolution passed by not less than two-thirds of the total number of the elected Members of Parliament, override the President's decision. Given the scrutiny by Parliament, the President will be constrained to exercise his discretionary powers judiciously, rationally and must be prepared to state his reasons for doing so.

**118. On the process of appeals to the minister-in-charge, MAS is of the view that the avenue for recourse is sufficiently independent and accords procedural fairness both to the appellant and the authorities (Principle 4).** The minister is not involved in day-to-day supervisory matters, and is therefore an independent party to whom appeals can be made. Independence of the appeal process is further underpinned by the composition of the Appeal Advisory Committee (AAC) which comprises independent external experts with financial industry, legal or accounting background. MAS notes the assessors' observations and remains cognisant of the need to maintain independence of the appeal process.

**119. The assessment recommends that the authorities consider imposing a notification requirement on unlisted public companies that rely on prospectus exemptions to raise funds as well as reviewing the timeline for unlisted public companies to present their accounts (Principle 16 and 17).** The authorities note that unlisted public companies in Singapore are normally closely-held and tend to operate more like private companies. They seldom access the public capital markets for funding. In the event that unlisted public companies undertake private fundraising (by relying on prospectus exemptions), such fundraising will be very limited in scale and reach because of the restrictive conditions attached to these exemptions. As such, the public interest element for unlisted public companies is not as strong as that for listed companies, where the disclosure requirements and reporting timeframe are accordingly more stringent. Notwithstanding the foregoing, the authorities will study the recommendations and, if appropriate, fine-tune the requirements applicable to unlisted public companies.

**120. The authorities note the assessors' recommendation to increase the frequency of inspections of CIS operators and other intermediaries (including approved trustees for CIS) (Principle 12, 24, 25, 28, and 31).** MAS will consider increasing the frequency of inspections of licensed intermediaries and CIS operators. With respect to approved trustees for CIS, MAS considers its current supervisory and inspection program, which places more emphasis on the larger and more active trustees, to be effective and appropriate. Under this program, MAS had over the last three years conducted on-site inspections on trustees which, in aggregate, provide trustee services to more than 75 percent of all authorized CIS. MAS' supervisory and inspection program is complemented by off-site reviews, supervisory visits, and engagement and discussions with trustees on the industry best practices.

**121. The authorities wish to express their appreciation to the IMF and its assessors for the time and effort put in for the assessment.** The authorities will thoroughly consider the recommendations made by the IMF, as they seek to further strengthen operational practices and policies to achieve the outcomes stated in the FSAP assessment, in a manner best suited to Singapore's circumstances.