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Singapore: Financial System Stability Assessment, including Reports on the Observance of Standards and Codes on the following topics: Banking Supervision, Insurance Regulation, Securities Regulation, Payment and Settlement Systems, Monetary and Financial Policy Transparency, and Anti-Money Laundering

This Financial System Stability Assessment on **Singapore** was prepared by a staff team of the International Monetary Fund and the World Bank 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 **February 25, 2004.** 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

Prepared by the Monetary and Financial Systems and Asia and Pacific Departments

Approved by Stefan Ingves and David Burton

February 25, 2004

- This Financial System Stability Assessment (FSSA) report is based on the work of three Financial Sector Assessment Program (FSAP) missions that visited Singapore in November 2002, July–August 2003, and September 2003. The FSAP findings were discussed further with the authorities during the Article IV consultation mission in December 2003.

- The FSAP team comprised Shogo Ishii (Head), Paul Kupiec, Mark O'Brien, and Terry Donovan (all MFD); Abdel Senhadji and Byung Kyoon Jang (both APD); Burkhard Drees (formerly ICM, currently INS); Margaret Cotter (LEG); Roberto Guimaraes-Filho (formerly MFD, currently WHD); Tadashi Endo, Melinda Roth, and Craig Thorburn (all World Bank); Peter Braumuller (Financial Market Authority, Austria); Andrea Corcoran (U.S. Commodity Futures and Trading Commission); Susan Hopkins (U.S. Office of the Comptroller of the Currency); Olli Mattinen (Financial Supervisory Authority, Finland); Paul Ryan (Australian Transaction Reports and Analysis Center); Harm Jan Woltjer (Netherlands Bank); and Ian Woolford (Reserve Bank of New Zealand). Harald Anderson and Jahanara Zaman (both MFD) provided research assistance; and Joanna Meza-Cuadra and Nirmaleen Jayawardane (both MFD) provided administrative assistance.

- Singapore's financial sector has proven resilient in the face of a series of economic shocks and asset price declines in the past few years. The local banks and insurance companies are profitable and well capitalized. Stress test results indicate that Singapore's systemically important banks and insurance companies could withstand further significant shocks.

- Singapore's close integration with the global financial system does not appear to pose a stability concern in the current financial environment. Nevertheless, the importance of strengthened market surveillance is underscored.

- Although the regulatory systems and supervisory practices exhibit a high degree of observance of international standards and codes, the FSAP team made some specific recommendations to further enhance the risk-based regulatory and supervisory framework, strengthen the accountability and independence of the Monetary Authority of Singapore (MAS), and improve monetary and financial policy transparency.

- The main authors of this report are Shogo Ishii, Paul Kupiec, Mark O'Brien, Burkhard Drees, and Byung Kyoon Jang.

FSAPs are designed to assess the stability of the financial system as a whole and not that of individual institutions. They have been developed to help countries identify and remedy weaknesses in their financial sector structure, thereby enhancing their resilience to macroeconomic shocks and cross-border contagion. FSAPs do not cover risks that are specific to individual institutions such as asset quality, operational or legal risks, or fraud.

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GLOSSARY

ACU	- Asian Currency Unit
ADM	- Asian Dollar Market
AML/CFT	- Anti Money Laundering/Combating the Financing of Terrorism
BCP	- Basel Core Principles
CAR	- Capital adequacy ratio
CDD	- Customer due diligence
CDP	- Central Depository Private Limited
CISs	- Collective investment schemes
CLS	- Continuous Linked Settlement
CPF	- Central Provident Fund
CPSIPS	- Core Principles for Systemically Important Payment Systems
CPSS	- Committee on Payment and Settlement System
DBU	- Domestic Banking Unit
FAA	- Financial Advisors Act
FATF	- Financial Action Task Force
FSAP	- Financial Sector Assessment Program
FT	- Financing of Terrorism
GIC	- Government of Singapore Investment Corporation
HDB	- Housing and Development Board
IAIS	- International Association of Insurance Supervisors
IOSCO	- International Organization of Securities Commissions
MACMA	- Mutual Assistance in Criminal Matters Act
MAS	- Monetary Authority of Singapore
MEPS	- MAS Electronic Payment System
ML	- Money Laundering
NPLs	- Nonperforming loans
RTGS	- Real-time gross settlement system
SAS	- Statement of Accounting Standards
SDCB	- Singapore dollar corporate bond
SES	- Stock Exchange of Singapore
SFA	- Securities and Futures Act
SGS	- Singapore government securities
SGX	- Singapore Exchange
SGX-DT	- SGX's Derivatives Trading Division
SGX-ST	- SGX's Securities Trading Division
STRO	- Suspicious Transactions Reporting Office
SWIFT	- Society for Worldwide International Financial Telecommunication
TSOFA	- Terrorism (Suppression of Financing) Act
TWI	- Trade weighted exchange rate index

I. Overall Stability Assessment

1. **Singapore's financial sector, which is dominated by the banking sector, remains robust despite a series of economic downturns and substantial asset price declines.** Singapore's local banks, which have a 55 percent share of domestic banking assets, are profitable and well capitalized. They are also liquid, adequately provisioned for nonperforming asset exposures, and conservative in their management practices. The insurance sector is well capitalized and profitable overall. Stress test results indicate that Singapore's systemically important banks (including major foreign bank branches) and insurance companies could withstand significant shocks.

2. **Economic developments in the past few years have highlighted Singapore's vulnerability to exogenous shocks,** including the outbreak of Severe Acute Respiratory Syndrome (SARS). Going forward, the main potential risks to the profitability of the financial sector include, among other things, further negative shocks in external demand, continued weakness in the labor market, higher interest rates, lower asset prices, and the persistent threat of terrorism in the region. Although Singapore's external position and financial institutions are strong and economic shocks have been successfully handled in the past, the authorities are encouraged to implement several measures that would further contribute to financial sector stability (Box 1).

3. **Stability implications from Singapore's close integration with the global financial system are not an immediate concern, but the linkages should be more closely monitored to enhance the MAS' early warning capabilities**. The main financial linkages include local banks' operations overseas and in the Asian Dollar Market (ADM)—an offshore banking market—and foreign banks' presence in the domestic market. Local banks are increasingly exposed to external shocks through their growing overseas operations, but geographical diversification helps dampen the effects of domestic shocks. Local banks' activities in the ADM are mainly interbank lending, which has experienced virtually no losses even during the Asian crisis. Despite a markedly increased foreign banks' presence in the domestic banking market, no single bank has a large market position. Under this structure, together with the stringent licensing processes, the assurances of liquidity support from foreign banks' head offices, and the risk-focused supervision in cooperation with foreign regulators, foreign banks do not appear to pose risks to domestic financial stability.

4. **Systemic liquidity is well managed.** The policy objective of the MAS is to ensure the continued smooth functioning of the payment system and the financial system as a whole. The overnight facility introduced in 2001 has helped reduce the volatility of short-term interbank rates. The MAS is planning to introduce an intraday liquidity facility in conjunction with the upgrading of the payment system. As the authorities move from a rule-based to a risk-based approach to manage systemic liquidity, the liquidity requirements should be further reviewed to help local banks improve their profitability.

5. **Regulatory and supervisory practices exhibit a high degree of observance of international standards and codes across all segments of the financial sector.** In addition,

Singapore's financial sector benefits from an efficient legal system, accounting standards that closely follow international best practices, and ongoing initiatives to promote good corporate governance and to strengthen the framework of disclosure practices. Nevertheless, there is scope for the MAS to further enhance its accountability and independence, regulatory framework, and disclosure of information. The MAS has initiated a review of the MAS Act to address the accountability and independence issues and is studying ways to disclose more information to improve the public's ability to assess its supervisory performance.

Box 1. Singapore: Key Policy Recommendations

- **Macro-prudential monitoring:** Further strengthen the MAS' monitoring of: (i) the risks arising from new financial products; (ii) cross-border financial flows (including flows in the ADM and particularly transactions between branches and head offices) to detect potential strains in the offshore banking market; (iii) household and corporate sector balance sheets to assess the resilience of the private sector; and (iv) market and counter-party risks of derivatives activities by financial institutions.
- **Regulatory systems and supervisory practices:** Further enhance the MAS' legal and regulatory framework through the completion of the review of the regulatory minimum capital requirements for local banks and the implementation of its new risk-based capital framework for the insurance industry, planned for introduction in late 2004; and complete the ongoing review of the MAS Act.
- **The MAS' accountability, independence, and oversight capabilities:** Reduce the potential for conflicts of interest arising from the multiple official responsibilities of the Chairman of the MAS.
- **Monetary and financial policy transparency:** Provide more information on how supervisory actions are taken in line with the risk-based supervisory framework and disclose more information to improve the public's ability to assess supervisory performance.
- **Anti-money laundering and combating the financing of terrorism:** Improve the effectiveness of cross-border mutual legal assistance.
- **Capital market development:** Review and address factors that may constrain the further development of the corporate bond market, including the limited use of credit ratings, guaranteed interest rates of the Central Provident Fund (CPF), and the CPF investment policy.

6. **While the MAS' conservative regulatory and supervisory framework helped local banks weather a series of adverse shocks, it may also serve to constrain local banks' future growth.** Local banks have consistently reported strong returns on assets, but, because they are highly capitalized, their equity returns are somewhat modest compared with many internationally active banks. The authorities are reviewing the rules for computing banks' CARs, the process of setting bank-specific capital requirements based on the risk profile and risk management capabilities of individual banks, and the regulatory minimum requirements for capital, which are currently significantly above Basel Accord requirements.

7. **A further deepening of the corporate bond market would help diversify funding sources for the corporate sector.** Notwithstanding a number of recent initiatives to facilitate market development, the corporate bond market in Singapore is not yet at an advanced stage of

development. Market growth has been constrained by the size and structure of the domestic economy and ample liquidity in the banking system. To further boost bond market activity, it is recommended that the authorities review and address factors that may constrain the corporate bond market. These factors include the limited use of credit ratings, the guaranteed interest rates of the CPF (a fully funded mandatory pension scheme with the total assets of 66 percent of GDP), and the CPF investment policy which segments large long-term funds from local capital markets.

II. Background

A. Recent Financial Sector Reforms

8. **Singapore has proactively implemented significant financial sector reforms since 1998.** The reforms are aimed at enhancing Singapore's position as a major international financial center and include (i) opening the financial industry to greater foreign competition; (ii) bringing regulatory and supervisory practices closer in line with international best practices on prudential regulation and supervision and disclosure-based regulation; (iii) developing deep and liquid fixed-income and equity markets; (iv) promoting the asset management industry; and (v) gradually liberalizing the restrictions on the international use of the Singapore dollar. Consistent with these objectives, a number of important initiatives have been taken in recent years, including a five-year program announced in May 1999 to liberalize the domestic banking sector (Box 2). The program allowed foreign banks to expand their operations in Singapore and encouraged consolidation among local banks.

9. **Further reforms are under way.** New and ongoing initiatives include the introduction of a risk-based capital framework for the insurance industry in late 2004; the separation of financial and nonfinancial activities by requiring banks to divest nonfinancial activities by July 2004 to minimize contagion risk and conflicts of interest;[1] the introduction of the second generation of the MAS Electronic Payment System (MEPS) in 2005 to further improve the efficiency of the payments system; and a deposit insurance scheme, which is being developed and expected to be introduced in 2005 to provide small depositor protection. In light of the future adoption of the New Basel Capital Accord (Basel II), the MAS has been in close consultation with local banks which have been enhancing internal rating infrastructures for credit risk measurement.

[1] Banks may apply to the MAS for an extension of the deadline to July 2006 to complete the required divestitures.

Box 2. Singapore: Key Financial Sector Reform Measures, 1999–2003

Liberalization measures

The MAS announced in 1999 a five-year program to liberalize the domestic banking sector in order to strengthen Singapore's banking system and the local banks. The program included an expansion of banking privileges and a broadening of the range of activities for foreign banks. The consolidation of local banks was also encouraged.

In 2002, all restrictions on the use of the Singapore dollar in international transactions were removed except for the following:

- Nonresident financial entities must swap Singapore dollar proceeds from Singapore dollar loans, equity, and bond issues into foreign currency to finance activities abroad.
- Financial institutions may not extend credit facilities larger than S$5 million if there is reason to believe that the funds may be used for Singapore dollar currency speculation.

Legislative and regulatory reforms

2001
- The Companies Act was amended to enhance prospectus disclosure requirements.
- An amendment to the Banking Act brought into force new policy measures, including the separation of financial and non-financial businesses of local banks, and the revision of the rules on property-related loans to more effectively monitor banks' exposure to the property sector.
- The new Liquidity Supervision Framework was passed to tie liquid asset requirements to a bank's liquidity profile and risk management capabilities.

2002
- The Financial Advisors Act (FAA) was enacted to integrate the different acts governing financial advisory services and to streamline licensing requirements, and the Securities and Futures Act (SFA) to consolidate legislation of capital market activities and introduced disclosure-based market supervision.
- A risk-based capital framework for securities for capital markets services license holders came into force.
- The Payment and Settlement Systems (Finality and Netting) Act was enacted to provide for protection of the payment and settlement systems from disruptions.
- The Consumer Credit Bureau was established.

2003
- The Code of Corporate Governance took effect. Although the Code is not mandatory, all listed companies are required to disclose their governance practices and any deviations from the Code in their annual reports.
- Listed companies with market capitalization of S$75 million or more were required to make quarterly reports.

Measures to develop capital markets

1999
- The Singapore Exchange (SGX) was formed following the demutualization and merger of the Stock Exchange of Singapore and Singapore International Monetary Exchange.

2000
- Repo-related Singapore government securities (SGS) holdings were allowed to count toward the liquid asset requirement to boost the repo market.
- A securities lending facility for primary dealers of SGS securities was introduced.
- The SGX was listed on the SGX Main Board.

2001
- Investment restrictions on CPF Special Accounts were liberalized.
- The five-year SGS bond futures contract was launched by the SGX.
- Fifteen-year SGS bonds were issued to extend the benchmark yield curve.

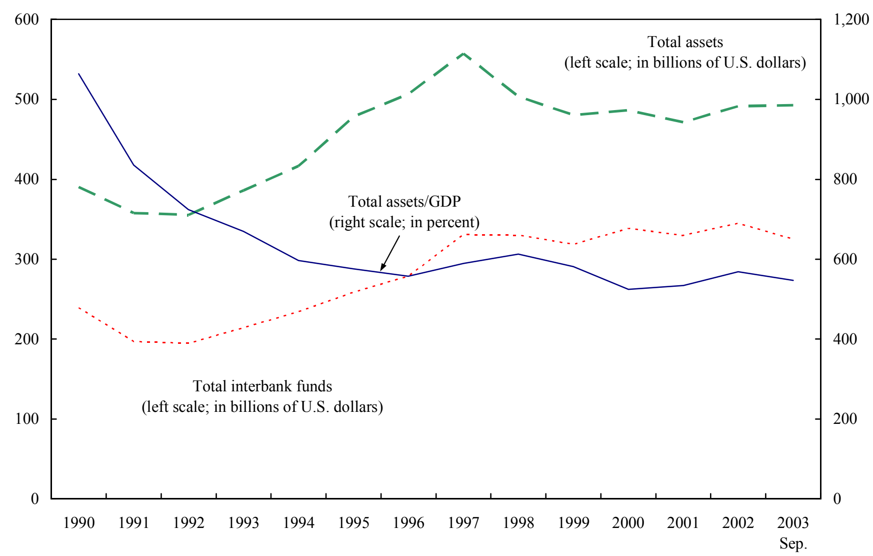
2002
- A new SGX listing manual came into effect. The changes include revised distribution guidelines for initial public offerings.
- The borrowing period for the securities lending facility was extended, and full order book information on the SGX securities market was made available to investors on a subscription basis.

B. Overview of the Financial System

10. **Singapore is a major international financial center.** With political stability, a modern infrastructure and highly-developed legal and regulatory frameworks, and strong macroeconomic fundamentals, Singapore has attracted about 580 financial institutions, many of which are foreign institutions providing a wide range of financial products and services.[2]

11. **The centerpiece of Singapore's financial center is the ADM, which intermediates large cross-border interbank and nonbank lending flows**. Total assets in the ADM were US$486 billion at the end of 2002, equivalent to about 550 percent of Singapore's GDP (Figure 1).[3] The key players in the ADM are local banks and large internationally active financial institutions. Growth has been weak in the past few years because of the regional economic environment, and the reduced foreign operations of Japanese banks. Since the Asian crisis, loans to East Asia (excluding Japan) have halved, and most of the interbank lending has been directed to Europe.

Figure 1. Singapore: Asian Dollar Market—Assets of Asian Currency Units, 1990–2003



12. **While it has undergone major structural changes in recent years, Singapore's financial sector is still dominated by the banking industry.** The commercial banking sector (excluding merchant banks) accounted for more than 85 percent of total financial sector assets in September 2003 (Table 1). Given the small size of the domestic economy, the bulk of commercial banking operations is conducted in the ADM and is largely carried out by foreign banks with a limited domestic retail market presence. Three local banking groups dominate the domestic retail banking sector but their assets are only one quarter of total commercial banking assets. The insurance sector is the second largest component of

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[2] The structure of Singapore's financial system is discussed in more detail in Appendix I.

[3] In part, as a result of substantial treasury operations, intra-group transactions with head offices and branches can play a substantial role in the ADM.

Table 1. Singapore: Structure of the Financial System
(At end-September 2003)

		Total Assets 1/		
	Number of Institutions	In billions of Singapore dollars	In percent of total assets in the financial system	In percent of 2002 GDP
Commercial banks	115	1,049.6	85.6	674.0
Local banks	5	257.0	21.0	165.0
Foreign banks	110	792.6	64.6	509.0
Qualifying full banks	6	224.9	18.3	144.4
Other full banks	16	63.8	5.2	41.0
Offshore banks	50	192.9	15.7	123.9
Wholesale banks	38	311.0	25.4	199.7
Merchant banks	51	58.3	4.8	37.4
Finance companies	4	11.1	0.9	7.1
Insurance companies	140	71.8	5.9	46.1
Direct insurers	56	66.3	5.4	42.6
Life insurers	6	5.5	0.4	3.5
General insurers	43	3.9	0.3	2.5
Composite insurers	7	56.9	4.6	36.5
Reinsurers	33	4.5	0.4	2.9
Captive insurers	51	1.0	0.1	0.6
Insurance brokers	59	1.0	0.1	0.6
Holders of capital market services (CMS) license	166	34.6	2.8	22.2
Dealing in securities	62	28.8	2.3	18.5
SGX-ST members	24	2.5	0.2	1.6
SGX-ST non-members	38	26.3	2.1	16.9
Trading in futures contracts	23	3.5	0.3	2.2
Fund management	84	2.3	0.2	1.5
Others	15	0.0	0.0	0.0
Holders of financial advisers' licenses	48	0.1	0.0	0.0
Total	584	1,226.5	100.0	787.6
Memorandum:				
Central Provident Fund 2/	1	102.1	...	65.6

Sources: Monetary Authority of Singapore; and Central Provident Fund.

1/ Total assets exclude operations of local financial institutions' foreign branches and subsidiaries. For local banking groups, total consolidated assets (including foreign operations) were S$352.6 billion at end-September 2003. For insurance brokers, holders of CMS and Financial Advisers' licenses, the assets data were as at end-December 2002.

2/ The CPF is a fully funded mandatory pension scheme that has evolved into serving two other objectives besides retirement (i.e., healthcare and housing). Figures refer to members' balances.

Singapore's financial system but, despite recent growth, its assets account for only about 6 percent of the total assets of the system. In part reflecting limited risk exposures and adequate capital levels, reliance on the reinsurance market has been low for both life and nonlife insurance.

III. Vulnerabilities and Soundness of the Financial System

A. Risks to Financial Stability

13. **Singapore's financial sector has been resilient in the face of major economic downturns in recent years.**[4] It has weathered three major shocks: the Asian crisis in 1997–98; a sharp drop in electronics exports in 2000–01 (resulting in the worst recession since independence); and the outbreak of SARS in early 2003. Sources of the resilience include a long history of sound fiscal and monetary policies, long-standing external current account surpluses, significant external assets and reserve positions, the healthy corporate sector (Box 3), high household wealth (Box 4), and conservative financial regulatory and supervisory practices.

14. **Nevertheless, the financial sector is subject to a number of potential risks.** The risks include (i) negative shocks in external demand, (ii) persistent weakness in the labor market, (iii) a sharp increase in interest rates, and (iv) declines in asset prices. These risks could negatively affect the financial sector through a number of channels, including declines in household incomes and corporate earnings, which could result in higher nonperforming loans (NPLs); declines in household wealth; depressed investment, which would reduce demand for loans; lower collateral values; and increased exposures of financial institutions to market risks. Moreover, the continuing threat of terrorism in the region could adversely affect Singapore's image as a safe haven and thus investment and growth.

B. Stability Implications of Linkages to the Global Financial System

15. **Singapore is closely connected with the global financial system.** As a result, Singapore's international financial linkages could potentially act as transmission channels for external financial shocks to Singapore's domestic financial sector but could also mitigate domestic financial shocks. Banks account for the main financial linkages between Singapore's financial sector and the global financial system. Key channels include (i) the international operations of local banks, including their activities in the ADM, and (ii) the role of foreign financial institutions in Singapore's domestic banking market.

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[4] Recent macroeconomic developments are discussed in detail in the staff report for the 2003 Article IV consultation for Singapore.

Box 3. Singapore: The Nonfinancial Corporate Sector

Overall, the nonfinancial corporate sector was consistently profitable from 1997 through 2001 when Singapore faced a series of adverse shocks. Given Singapore's high dependence on external demand, however, corporate pre-tax profitability was volatile, with the return on assets fluctuating between 3 percent and 6 percent and the return on equity between 6 percent and 14 percent in the period.

The corporate sector is resilient in part because of its low leverage. The average debt-equity ratio was 0.8 in the period 1999–2001, down from 1.0 in 1998. Based on Worldscope data in 2002, the ratio in Singapore was 0.7, comparable to Hong Kong SAR, but lower than in the United States (0.9), the United Kingdom (1.3), Japan (1.5), and Korea (1.6).[1/] In Singapore, medium-sized firms tend to be more leveraged than small-sized firms.

Liquidity has continued to improve since 1998 and remained high. Except for 1998, the current ratio (current assets divided by current liabilities) exceeded unity in the past ten years, indicating the corporate sector's ability to pay short-term obligations. Short-term debt as a share of total debt remained stable at about 70 percent.

Table. Selected Financial Soundness Indicators for the Nonfinancial Corporate Sector, 1996–2001

	1996	1997	1998	1999	2000	2001
Debt-equity ratio	0.8	0.9	1.0	0.8	0.8	0.8
Total corporate debt/GDP	1.4	1.5	1.8	1.6	1.5	1.7
Current ratio (current assets/current liabilities)	1.0	1.0	1.0	1.0	1.1	1.1
Ratio of short-term debt to total debt	0.7	0.7	0.7	0.7	0.7	0.6
Profitability						
Return on asset (pre-tax, in percent)	6.6	5.6	3.7	5.3	6.0	3.8
Return on equity (pre-tax, in percent)	13.9	11.6	6.0	11.7	13.3	7.3

Source: Singapore Department of Statistics.

[1/] Because of differences in accounting standards and practices, the international comparison should be interpreted with care.

Box 4. Singapore: Financial Soundness of the Household Sector

The household sector does not appear to be a source of vulnerability for the financial system in Singapore. Despite substantial declines in asset prices in recent years, household net wealth is very high (see table). Rising income and high savings rates have enabled Singapore's households to accumulate substantial net wealth in percent of personal disposal income compared with other advanced economies such as France, Japan, the United Kingdom, and the United States. Residential properties is the most important component of household wealth (accounting for 48 percent), followed by currency and deposits (22 percent), savings in the CPF (13 percent), and securities (10 percent).

Table. Selected Financial Soundness Indicators for the Household Sector, 2000–02

	2000	2001	2002 prel.
Savings as percent of gross disposal income	19.0	19.0	19.4
Net wealth in percent of gross disposal income	714.0	688.6	687.2
Financial assets in percent of total assets	49.0	51.8	52.5
Of which:			
Currency and deposits	21.5	22.9	22.2
Shares and securities	10.3	9.8	10.4
Residential property assets in percent of total assets	51.0	48.2	47.5
Liabilities in percent of gross disposable income	174.0	178.9	182.3
Liabilities in percent of net worth	24.4	26.0	26.5
Liabilities in percent of financial assets	40.0	39.8	39.9
Mortgage loans in percent of total liabilities	72.3	72.1	74.1
Mortgage loans in percent of currency and deposits	65.8	64.9	69.9
Mortgage loans in percent of residential property assets	27.8	30.8	32.7

Source: Singapore Department of Statistics.

Household financial liabilities rose in recent years—reflecting the sharp increase in housing loans—but household indebtedness appears to be in line with the ability to pay. Mortgage loans account for over 70 percent of total household liabilities, reflecting Singapore's high home ownership (about 94 percent). About 57 percent of mortgage loans are public housing loans, a large portion of which carries concessionary interest rates (currently 2.6 percent). Despite a large decline in property prices in recent years, the ratio of mortgage loans to residential property values remained low (at 33 percent in 2002).[1/] Although weaker labor market conditions and higher interest rates could adversely affect households' debt-servicing capacity, the high level of liquid asset holdings is likely to limit the household sector's vulnerability.[2/]

[1/] Singapore's residential property prices have declined by about 35 percent from their peak in 1996/97.

[2/] In Singapore, virtually all mortgage loans carry flexible interest rates.

16. **The links between the ADM and the domestic financial system—via local banks and foreign banks that are active in the Singapore domestic banking market—do not seem to present undue sources of vulnerability.** International linkages have to be assessed against the background of the ADM (Box 5). Although their involvement in the ADM is substantial, local banks use the ADM mostly as an investment vehicle for excess liquidity, rather than as a funding source. Their ADM exposures involve minimal credit risk because they consist mainly of interbank lending, which has suffered virtually no losses in the past. At the same time, the financial conditions of foreign institutions operating in the ADM have little direct consequence for the intermediation of domestic financing because the domestic lending operations of those foreign banks are relatively modest.[5]

17. **Local banks carry out considerable operations through overseas branches and subsidiaries.** Their foreign operations—which are concentrated in Hong Kong SAR and Malaysia and accounted for about one-third of combined local bank assets at end-September 2003 (compared with 25 percent in 2000)—appear to be managed effectively and are supervised under the MAS' consolidated supervision framework. The operations have been generally profitable, enhancing the resilience of Singapore's banking system as they helped boost profitability in the face of recent economic downturns in Singapore.

18. **Foreign banks have recently increased their presence in Singapore's domestic banking market.** Those banks with privileges of full banks and qualifying full banks accounted for about 31 percent of domestic lending to nonbanks and 27 percent of domestic nonbank deposits at end-September 2003.[6] Competition from foreign banks strengthens incentives for local banks to improve efficiency, which in turn boosts the resilience of the domestic financial system. The moderate market share of foreign institutions in the domestic banking market and the low concentration among them (no foreign bank has a market share of greater than 8 percent) would limit the impact of external shocks on the domestic market. A risk of simultaneous withdrawal from Singapore of foreign banks is likely to be low as long as Singapore maintains its competitive position with strong legal and regulatory systems and a favorable business environment.

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[5] Wholesale and offshore banks, which had a combined ADM market share of 57 percent in September 2003, account for only about 6 percent of domestic nonbank lending.

[6] The privileges of full banks and qualifying full banks are discussed in Appendix I.

Box 5. Singapore: Stability of the ADM

The ADM has gone through significant structural changes. In the 1980s and 1990s, the ADM primarily routed capital from markets in Europe, North America, and the Middle East to the fast-growing regions in Asia. In the aftermath of the Asian financial crisis, total assets declined by 9.7 percent year-on-year in 1998 and by 4.9 percent in 1999, and the distribution of creditors and borrowers changed markedly. Loans to non-bank residents in crisis-hit Asian countries fell as borrowers paid down their loans and banks reduced or wrote off loans. Non-bank deposits increased moderately, partly for safe haven reasons. Banks in a few of the crisis countries also channeled some of their liquidity to the ADM. As a result, Asian countries became net providers of funds to the ADM in the wake of the crisis, while Europe became a net borrower (Figure). Activities also shifted from nonbank lending to interbank lending, and Japanese banks scaled back their market presence sharply. These trends have broadened the geographical diversification of the ADM, and the decline in nonbank lending has reduced credit risk.

The ADM continued to function smoothly despite considerable changes in the wake of the Asian financial crisis. Some banks were affected during the Asian financial crisis by the imposition of currency restrictions in some regional countries that complicated the settlement of some contracts. However, these difficulties were managed effectively and had no domestic repercussions. The diversity of the ADM—both in terms of participating institutions as well as geographical deposit sources and loan exposures—has helped it to adapt successfully to changing regional conditions. The integrity of the ADM is also ensured by stringent approval processes for foreign banks, assurances that foreign head offices support branches if liquidity is needed, and the MAS' risk-focused supervision in cooperation with foreign regulators.

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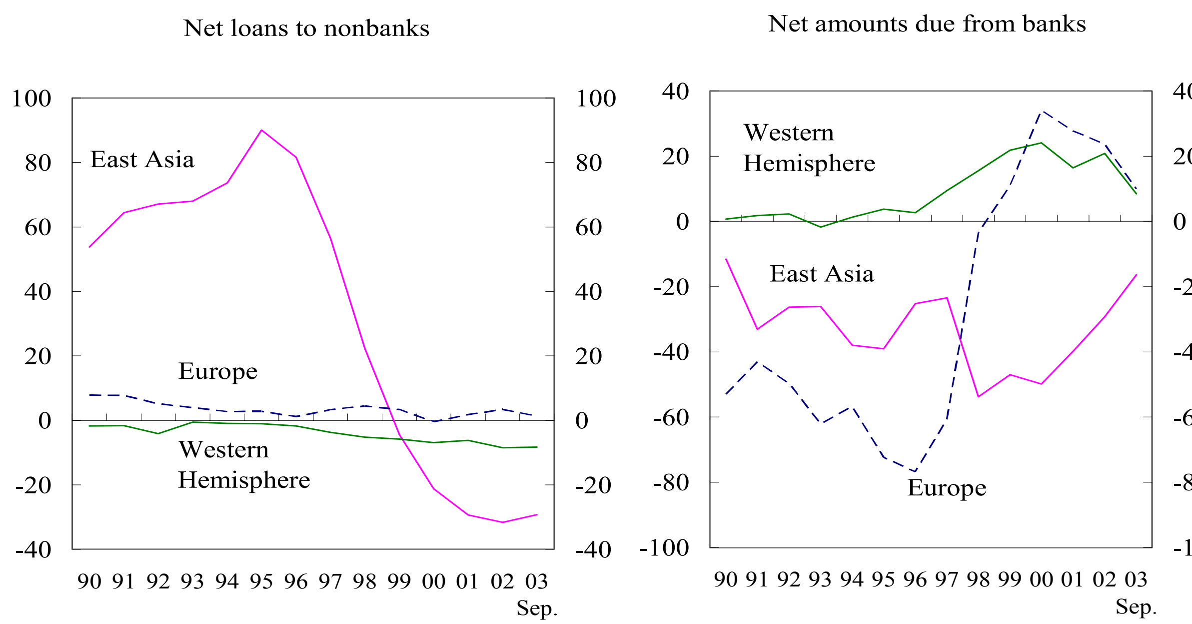
Asian Dollar Market, 1990–2003
(In billions of U.S. dollars)



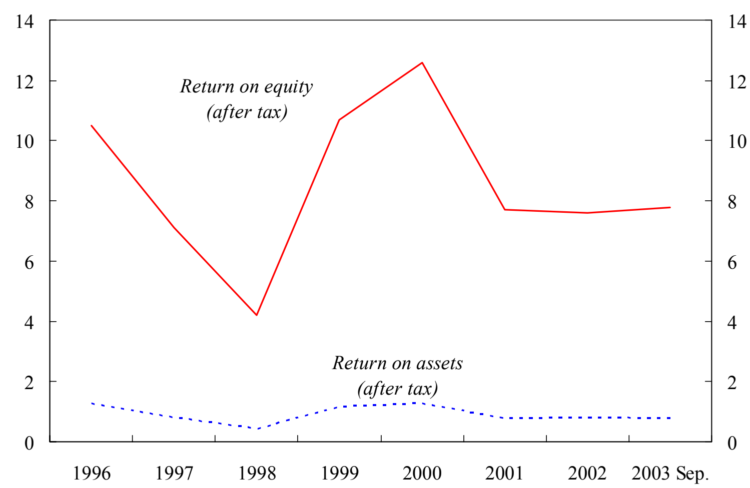
Source: Monetary Authority of Singapore.

19. **Even though the stability implications from international financial linkages are likely to be limited in the current financial environment, the linkages underscore the importance of market surveillance.** While the assessment of the Basel Core Principles (BCP) indicates that the microprudential aspects are adequately monitored, there is scope for enhancing macroprudential monitoring, including the monitoring of the structure and nature of financial flows in the ADM,[7] which can change quickly. Monitoring of substantial intra-group transactions with head offices or branches of local and foreign banks could also be enhanced. While in most cases intra-group transactions are routine, sometimes they may yield information about special factors or even funding strains within institutions.

C. Commercial Banking Sector

20. **Despite the 1997 Asian crisis and the more recent economic downturns, local banks have enjoyed an extended period of profitability** (Figure 2 and Table 2). Their average after-tax return on assets remained above 1 percent in the period 1999–2002, after adjusting for amortization of the goodwill associated with domestic mergers and foreign acquisitions. Local banks' profitability was stable in the first nine months of 2003 despite the SARS-induced severe economic downturn. While net interest income fell by 7.5 percent (year-on-year) in the period, non-interest income increased by 21 percent, largely reflecting higher fees and treasury-related activities. Growing overseas operations also contributed to the stability of local banks' profitability. Moreover, as local banks have consolidated the management of recent domestic acquisitions and foreign operations, they have generated cost savings and benefited from economies of scale. The ratio of non-interest expenses to total income fell from about 44 percent in 2001 to below 40 percent in the first nine months of 2003.

Figure 2. Aggregate Profitability of Local Singapore Banks, 1996–2003
(In percent)



Source: Monetary Authority of Singapore.

[7] Banks operating in Singapore are required to record their transactions in Singapore dollars in the Domestic Banking Unit (DBU), while transactions in foreign currency are booked primarily in the Asian Currency Unit (ACU). The complexities of the regulatory-based bank accounting system make it difficult to analyze overall developments in the financial center.

Table 2. Singapore: Financial Soundness Indicators—Commercial Banking Sector, 1998–2003

(In percent, unless otherwise specified)

	1998	1999	2000	2001	2002	2003 1st 3Q
Capital adequacy						
Regulatory capital to risk-weighted assets (local banks) 1/	18.1	20.6	19.6	18.1	16.9	17.8
Regulatory capital to risk-weighted assets (foreign banks) 2/	11.3	11.8	11.3	11.3	11.3	...
Regulatory tier I capital to risk-weighted assets (local banks) 1/	16.0	17.4	16.4	11.6	11.3	11.6
Regulatory tier I capital to risk-weighted assets (foreign banks) 2/	7.2	7.3	7.3	7.5	7.7	...
Shareholders' equity to assets (local banks) 1/	10.0	11.0	10.0	10.0	11.0	11.0
Asset quality						
Classified loans to total loans 3/						
Local banks 1/	7.8	8.5	5.6	5.7	5.5	5.3
Foreign banks 4/	11.8	10.9	8.8	7.7	8.0	5.1
NPLs to total loans						
Local banks 1/	...	5.3	3.4	3.6	3.4	3.5
Foreign banks 4/	...	6.5	5.4	3.7	3.7	2.5
Classified loans net of specific provisions to regulatory capital (local banks) 1/ 3/	28.7	26.4	23.5	25.1	25.0	20.3
NPLs net of specific provisions to regulatory capital (local banks) 1/	...	11.3	10.7	11.4	10.7	9.7
Total provisions to classified loans (local banks) 1/	51.1	53.8	53.8	56.9	60.2	64.3
Total provisions to NPLs (local banks) 1/	...	86.2	87.2	90.1	96.7	96.6
Specific provisions to classified loans (local banks) 1/	28.8	34.2	29.5	32.6	33.8	35.7
Specific provisions to NPLs (local banks)	...	54.7	47.9	51.5	54.3	53.6
Loan concentrations (local banks) (in percent of total loans) 1/						
Bank loans	28.1	31.2	35.4	30.0	29.3	25.7
Non-bank loans	71.9	68.8	64.6	70.0	70.7	74.3
Of which:						
Manufacturing loans	9.2	8.8	9.1	8.2	8.4	8.9
Building and construction loans	17.2	16.6	16.3	15.5	14.1	13.0
Housing loans	18.2	21.3	22.3	26.0	27.5	28.3
Loans to professionals and private individuals	12.6	13.1	13.8	13.5	14.1	14.0
Loans to nonbank financial institutions	15.4	14.0	14.7	13.1	13.4	13.5
Profitability						
After-tax return on assets (local banks) 1/ 5/	0.4	1.2	1.3	0.8	0.8	0.8
After-tax return on assets (foreign banks) 4/	-0.1	0.3	0.5	0.5	0.8	...
After-tax return on equity (local banks) 1/ 5/	4.2	10.7	12.6	7.7	7.6	7.8
Net interest margin (local banks) 1/	2.3	2.2	2.2	2.0	2.1	2.0
DBU net interest margin (foreign banks) 4/	2.3	2.5	2.1	2.0	1.9	1.7
DBU income to total income (local banks; Singapore operations only)	74.2	71.2	62.9	65.4	70.0	67.5
DBU income to total income (foreign banks) 4/	21.4	28.0	28.1	25.4	26.8	31.7
Non-interest income to total income (local banks) 1/	26.8	31.8	29.3	36.4	32.4	37.9
Non-interest income to total income (foreign banks) 4/	46.5	36.7	51.6	45.4	47.6	...
Non-interest expenses to total income (local banks) 1/	33.5	33.3	39.6	43.6	40.3	39.5
Non-interest expenses to total income (foreign banks) 4/	54.8	55.9	46.9	48.9	46.3	...
Liquidity (Singapore operations only) 6/						
Liquid DBU assets to total DBU assets (local banks)	13.0	15.7	14.2	14.4	15.4	15.4
Liquid DBU assets to total DBU liabilities (local banks)	21.3	23.6	23.9	23.2	22.4	22.6
Total DBU deposits to total deposits (local banks)	74.5	75.4	71.7	70.3	71.8	71.9
Non-bank customers share of DBU deposits (local banks)	84.3	89.3	85.7	91.7	93.3	94.0
Liquid DBU assets to total DBU assets (foreign banks) 4/	15.6	17.1	14.3	15.0	15.6	16.9
Liquid DBU assets to total DBU liabilities (foreign banks) 4/	23.8	26.1	23.3	26.2	27.0	29.4

Sources: Monetary Authority of Singapore; and banks' accounts.

1/ Represents weighted average of three local banking groups and includes operations of foreign branches and subsidiaries.

2/ Data from a parent bank's annual report on the entire group's Tier 1 and total capital adequacy ratio.

3/ Classified loans include current loans that exhibit definable weaknesses that may jeopardize repayment, in addition to NPLs that are overdue more than 90 days (comprising loss loans—including fully provisioned loss loans not written off—as well as substandard and doubtful loans).

4/ Represents weighted average of the 10 largest foreign banks operating in Singapore. The annual figures for asset quality, profitability, income and expenses are from the annual audited accounts of the Singapore branch of the foreign bank.

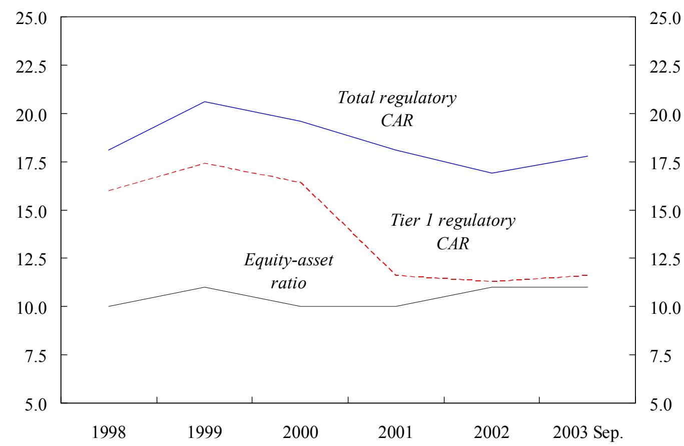
5/ For the first three quarters of 2003, the figure is estimated based on annualized profits and assets at end-September 2003.

6/ Liquid DBU assets include balances with the MAS, cash, SGS, and bills of exchange. Total DBU liabilities refer to the liabilities base used towards computing the MAS' minimum liquid assets requirement.

21. **Local banks' foreign operations account for a significant portion of their total operations and are profitable overall.** Foreign operations generated 31 percent of total pre-tax profits of local banks in the first nine months of 2003 (up from nil in 2000). These operations more than offset declines in interest earnings—the most important income source accounting for 62 percent of local banks' combined income in the first nine months of 2003. Interest earnings came under pressure in recent years, reflecting increased competition in the domestic market, weak loan demand associated with regional economic weakness, and high levels of liquidity in Singapore and major financial markets.

22. **All three local banks have strong capital and liquidity positions.** Their average capital adequacy ratio (CAR), although declining in recent years, was about 18 percent at end-September 2003, high by international standards, and the average ratio for Tier 1 capital exceeded many countries' total CAR (Figure 3). The local banks have maintained high liquidity partly owing to the minimum cash balance and minimum liquid asset requirements (discussed below). These liquidity requirements put pressures on local banks' profitability.

Figure 3. Capital Ratios of Local Banks, 1998–2003
(In percent)



Source: Monetary Authority of Singapore.

23. **The loan quality of local banks has improved in recent years.** The average ratio of overall NPLs to total loans for local banks (including overseas operations) declined from 5.3 percent at end-1999 to 3.5 percent at end-September 2003 (Table 2).[8] Local banks' global loan portfolio performance does not appear to have been materially affected by economic shocks since a large portion of local banks' lending is accounted for by interbank and mortgage loans, the delinquency rates of which have been very low. The MAS imposes strict limits on consumer lending,[9] and the consumer credit bureau was established in August 2002 to facilitate

[8] NPLs are overdue more than 90 days and comprise loss loans—including fully provisioned loss loans not written off—as well as substandard and doubtful loans. The average ratio of classified loans to total loans fell from 8.5 percent in 1999 to 5.3 percent at end-September 2003. Classified loans include current loans that exhibit definable weaknesses that may jeopardize repayment, in addition to NPLs. The MAS uses NPLs and classified loans interchangeably, and publishes only the latter data.

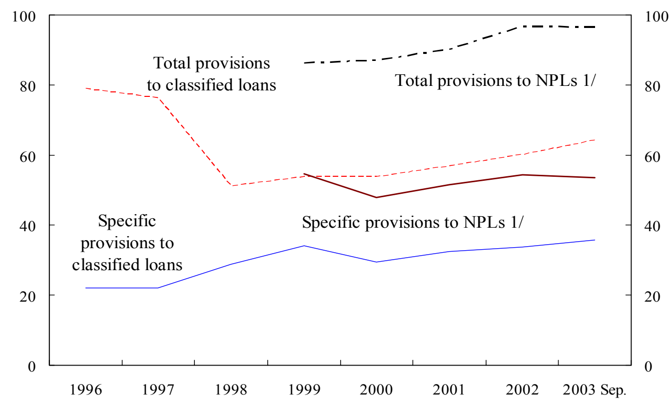
[9] The MAS imposes binding limits on certain types of credit granted to Singapore residents by financial institutions. Residential mortgage loans are restricted to 80 percent of the property

(continued)

the risk management of consumer loans. In August 2003, the government announced several changes to the CPF scheme, including the 3-percentage-point cut in employer contributions and the reduction in the ceiling of salary subject to the CPF contribution. Local bank representatives noted that recent CPF changes would have only a modest impact on the performance of their mortgage portfolios.

24. **Local banks have adequate provisions for their nonperforming asset exposures** (Figure 4). Local banks' overall provisions and specific provisions have risen since 1998 to about 64 percent and 36 percent of total classified loans, respectively (representing about 97 percent and 54 percent of NPLs) at end-September 2003. It should be noted that the MAS uses conservative criteria for determining classified loans and that these provision rates include the value of collateral. Net of collateral, classified loans are provisioned at more than 100 percent in all local banks.

Figure 4. Local Bank Provisioning Rates, 1996–2003
(In percent)



Source: Monetary Authority of Singapore.

25. **The net market value of local banks' derivative exposures is small in absolute amounts as well as relative to their assets and capital positions.** Net mark-to-market values amounted to only S$0.5 billion at end-September 2003. While local banks' derivatives activities are concentrated in foreign exchange and interest rate products, credit derivatives grew substantially in 2002. Foreign banks account for 76 percent of the estimated potential counterparty credit risk exposures in local banks' derivatives books.

26. **Operations of systemically important foreign bank branches appear to be managed prudently.** Despite a sharp decline in operating profits as a result of increased provisions, the 10 largest foreign bank branches in terms of deposits have remained profitable since 1999 and their aggregate net income grew strongly in the first nine months of 2003.[10] Stress test results discussed below also suggest that the operations of systemically important foreign bank branches could suffer only modest losses under either stress test scenario examined. There is no systemic concern about these foreign bank branches, reflecting their good loan quality (NPLs

value, while credit card balances are capped at twice the cardholder's monthly income. Moreover, only individuals whose annual income exceeds S$30,000 can qualify for a credit card.

[10] While the MAS closely monitors foreign bank branch operations—especially qualifying full banks—it publishes few statistics on foreign bank branch operations.

were 2.5 percent of total loans at end-September 2003) and their parent banks' overall strong financial conditions.[11]

27. **Stress test results indicate that potential stress loss exposures of Singapore's systemically important banks are well contained**. The stress tests included two scenarios which were developed jointly by the FSAP team and MAS staff in November 2002, before the outbreak of SARS. Key assumptions such as real GDP growth, unemployment, asset prices, and interest rates were calibrated conservatively compared with historical trends to present severe, but realistic macroeconomic shocks. The first scenario simulates a global weakness that slows Singapore's growth and reduces asset prices; and the second scenario assumes a global recession compounded with heightened threats of regional terrorism (complete scenario assumptions are presented in Appendix II).[12] Both scenarios include shocks to regional economies. The results suggest that Singapore's systemically important banks have only modest risk exposure to these scenarios (Box 6). Potential losses in all but one participating bank can be absorbed by 2002 pre-tax profits. Existing capital buffers and home office support (in the case of foreign banks) offer additional protections. Moreover, the limited role of foreign-currency-denominated deposits and loans for nonbank residents limit vulnerability.[13] It should be noted that the simulated global weakness scenario is similar in many respects to conditions experienced in the first half of 2003, a period when local banks remained profitable.

[11] The average ratio of regulatory Tier I capital to risk-weighted assets for these banks was about 8 percent at end-2002.

[12] The MAS coordinated the stress exercise among three local banking groups and three systemically important foreign bank branches and provided the FSAP team with stress test results on a bank-by-bank basis. The FSAP team visited the participating institutions to review the details and assumptions that the institutions used to arrive at their stress test results. The participating banks exercised considerable care in using their internal risk-measurement systems and credit analysts to estimate the impacts of the hypothetical scenarios.

[13] Relatively little foreign-currency loans and deposits involve nonbank Singapore residents; such loans and deposits in local banks accounted for only 5.5 percent of total domestic loans and about 8 percent of total domestic deposits at end-September 2003.

Box 6. Singapore: Banking Sector Stress Test Results

The Singapore stress tests are based on two global scenarios: Scenario 1 simulates global weakness that slows growth in Singapore's export oriented economy; and Scenario 2 compounds global weakness by heightened threats of regional terrorism. The key scenario assumptions are calibrated conservatively on historical trends; notably real GDP growth is assumed to be zero in Scenario 1 and -1.7 percent in Scenario 2, compared with an average rate of more than 6 percent in the past decade. Appendix II presents complete scenario assumptions as well as the techniques used to estimate the impacts of the scenarios.

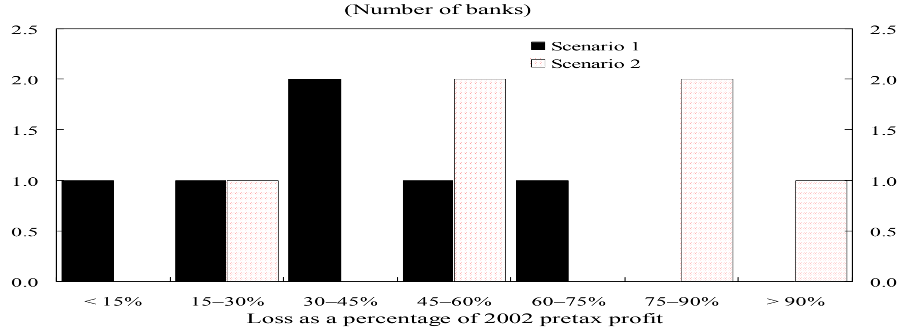
On average, it is estimated that overall losses could be absorbed by bank operating profits (see Table).[1] Only one bank experienced stress losses that would exhaust 2002 pretax profits (Figure A). Capital buffers of local and parent foreign banks are more than adequate to absorb the stress scenario exposures considered in these scenarios.

Average Stress Test Losses 1/
(As a percentage of pre-tax operating profits)

	Scenario 1	Scenario 2
Market risk losses	-5.0	7.6
Credit risk losses	42.7	63.4
Total stress test losses	37.7	70.0

1/ Simple average of individual bank stress test results. Negative numbers represent gains.

Figure A. Overall Stress Test Scenario Results
(Number of banks)



Total **market risk losses**, including net interest income impacts, are mild. On average, banks post market risk-related gains in Scenario 1 as the reduction in interest rates in Singapore and advanced countries produces gains on net interest income and fixed income positions that more than offset equity and foreign exchange losses. In Scenario 2, foreign exchange exposures generate gains, but these are offset by net interest income losses stemming from higher domestic interest rates and losses from lower equity prices in Singapore. The distribution of results is summarized in Figure B. Average total **credit risk losses**, measured by stress-induced increases in specific provisions are modest under scenario 1. These losses are compounded by collateral weakness in Scenario 2 as property and equity prices suffer additional declines. The distribution of credit risk losses is summarized in Figure C.

Figure B. Aggregate Market Risk Results
(Number of banks)

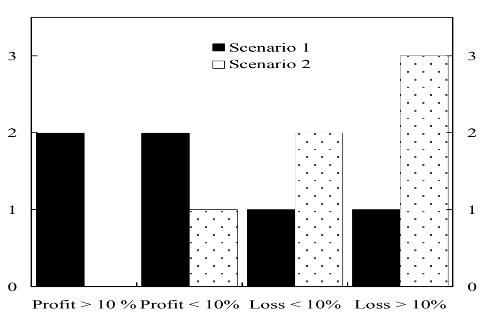
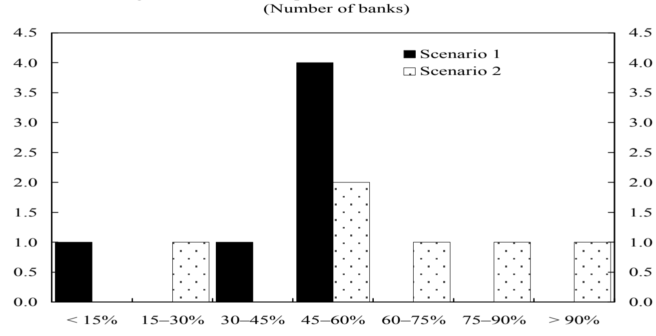


Figure C. Additional Specific Provisions for Credit Risk
(Number of banks)



[1] Stress losses are compared to 2002 pretax profits since the participating foreign bank branches have no independent capital.

D. Insurance Sector

28. **The insurance sector is advanced and functioning well.** The sector is open to foreign investment, with no aggregate foreign ownership limit on local direct insurers. Links to the banking sector are not systemically important, despite some cross-ownership. Local insurance companies are not material players in the emerging credit derivative market where transactions are being carried out mainly by foreign institutions. The sector has grown substantially in the past few years, especially the life insurance industry, largely due to the one-time effect of the modification to the CPF Investment Schemes in January 2001, which allowed CPF members to use their Special Account balances to purchase insurance products (Table 3). The growth of the nonlife insurance industry has been weaker, and penetration levels (measured by the ratio of total premiums to GDP) are low by international standards.

Table 3. Singapore: Financial Soundness Indicators—Insurance Sector, 1998–2003
(In percent, unless otherwise specified)

	1998	1999	2000	2001	2002	2003 First Three Quarters
Life insurance						
Total new business premium growth	-48.0	114.0	72.4	127.8	-26.6	10.0
Of which: Annual premium business	-36.4	2.3	27.5	-35.5	50.9	-32.4
Total in force gross annual premium growth	6.3	4.7	8.4	2.9	4.7	6.0
Premiums as a percentage of GDP	3.5	3.3	3.2	3.4	3.5	...
Cession ratio (direct non linked business)	0.6	0.6	0.5	0.4	0.6	...
Percentage of business which is investment linked	6.0	7.0	9.0	10.0	9.3	...
Management expenses to premium income	5.1	4.3	3.5	2.5	2.9	4.2
After tax profit/annual premium income	0.6	4.4	4.4	5.0	9.7	...
Nonlife insurance						
Gross premium (annual change)	-7.2	3.6	18.8	17.3	19.5	3.5
Net premium (annual change)	-7.6	5.2	16.0	16.8	15.4	5.8
Net premium earned (annual change)	-1.5	-1.2	14.4	13.6	12.9	12.3
Premiums as a percentage of GDP	1.1	1.0	1.0	1.2	1.4	...
Cession ratio	16.8	15.6	17.6	17.9	20.7	17.9
After tax profit/premium	5.7	12.7	8.6	2.6	2.1	...
Expense ratio (Singapore fund only)	35.8	36.2	34.7	36.3	35.7	25.0
Loss ratio (Singapore fund only)	60.5	62.2	64.6	68.7	66.1	56.9

Sources: Monetary Authority of Singapore; and Swiss Re.

29. **Unlike many other countries, Singapore's life insurance industry is profitable overall.** Management expense rates are relatively favorable compared to similar markets. Companies have lowered bonus rates on participating business in response to the lower return environment, improved distributor productivity, and increased use of bank distribution

channels. Only the small reinsurance industry records persistent and substantial losses in the offshore funds relative to its business size.

30. **The nonlife insurance industry is also profitable, but its profitability weakened significantly from 2001–02 owing in part to rising expenses.** Industry concern about the weak profitability of automobile insurance, which dominates the nonlife insurance segment, led to the introduction of innovative independent claims assessment centers in an attempt to better control ballooning expenses. After one year of operation, the initiative is showing good early results.

31. **Stress test results indicate that the insurance sector is not a systemic risk to the financial sector.** In addition to the two scenarios applied to the banking sector, the stress tests were carried out by assuming lower corporate bond price levels and receivables. The stress test results suggest that the nonlife insurance sector would remain largely unaffected by the scenarios mainly reflecting their limited exposure to equities and the property market. The life insurance sector faces a greater stress exposure but could maintain statutory solvency margins from its own resources under the less severe scenario. Under the more severe scenario, the sector would need to take remedial measures, including temporarily reducing bonus rates to ensure integrity without external capital.

32. **The insurance sector faces challenges in promoting further growth.** The domestic market is small. Moreover, under the current low-return environment, the insurance sector is constrained by the CPF's guaranteed interest rates, which exceed comparable market yields and thus keep funds away from insurance products. Although both life and nonlife companies are seeking productivity improvements in an increasingly competitive environment, progress has been slow. Investments of insurance companies characterized by conservative asset mixes and high levels of liquidity suggest that companies could utilize their assets more efficiently. The ongoing development of Asset Liability Modeling techniques within the industry could help improve investment efficiency.

IV. Institutional Framework for Financial Stability

A. Systemic Liquidity Management

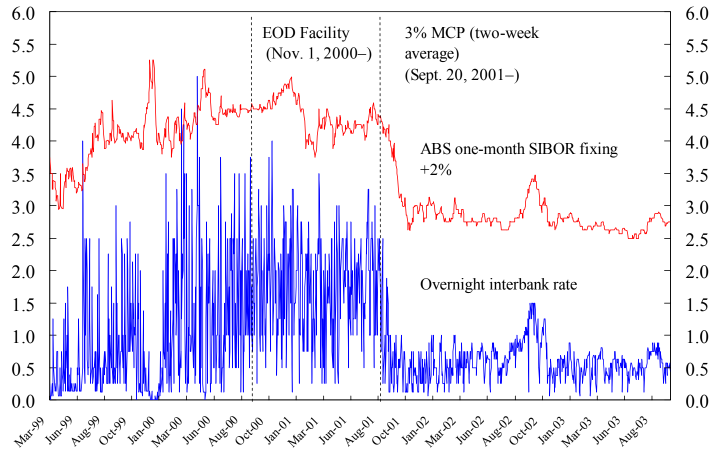
33. **Systemic liquidity is well managed.** The policy objective is to ensure the smooth functioning of the payment system, and more generally, the financial system at all times. As monetary policy interventions take place in the exchange market, domestic market operations are aimed at maintaining minimum cash balances in the banking system close to the level (about 3 percent of deposits) which has been found sufficient to avoid payment system difficulties.[14] The daily cash balances are allowed to fluctuate between 2 percent and 4 percent.

[14] Banks are required to keep interest-free cash balances with the MAS equivalent to 3 percent of their liabilities base on average for two weeks. In addition, banks are required to hold at least (continued)

This range accommodates uneven distribution of liquidity which interbank transactions have not mitigated.

34. **The liquidity management system has been complemented by an overnight borrowing facility since November 2000.** Credit is provided through SGS repos at an interest rate of 2 percentage points above the one-month interbank rate. Access to credit via this facility is not automatic; banks must apply to the MAS and could in principle be refused. To date, few applications have been made, but the facility seems to have reduced volatility of short-term interest rates (Figure 5). With the inclusion of the Singapore dollar into the Continuous Linked Settlement (CLS), the MAS has introduced a system to inject intraday liquidity into the banking system as an additional safeguard to ensure adequate liquidity in the system. The MAS plans to establish a collateralized and automated intraday liquidity facility—which is open to all financial institutions participating in the MEPS—in conjunction with the introduction of the second generation of the MEPS. As the authorities move from a rule-based to a risk-based approach, the liquidity requirements should be further reviewed to help local banks improve their profitability.

Figure 5: Singapore: Overnight Interbank Rate, 1999–2003



Source: Monetary Authority of Singapore.

35. **The MAS provides emergency liquidity assistance to the general market in the event of systemic market disruptions, including liquidity problems in a systemically important bank.** Currently, such liquidity provision is collateralized with SGS. The MAS may consider accepting statutory board bonds, corporate bonds, or G7 government bonds as eligible collateral, in the event of extreme systemic crisis. In addition, the MAS has made it clear to the market that it stands ready to provide sufficient liquidity and other support as necessary in times of actual or potential problems (for example, prior to Y2K and in the immediate aftermath of the September 11, 2001, terrorist attacks in the United States).[15]

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18 percent of their liabilities base in liquid assets unless they are applied to the risk-based bank-specific minimum liquid asset framework.

[15] The MAS injected S$2.5 billion on September 12, 2001, to calm the market and widened the exchange rate policy band.

B. Safety Nets and Contingency Planning

36. **The authorities have announced their intention to introduce a mandatory deposit insurance scheme to protect small depositors and to dispel public perception of a government guarantee on deposits.** The MAS consultation paper published in August 2002 proposed a compulsory deposit insurance scheme for full banks and finance companies that will be funded by a risk-based premium partly based on the newly introduced supervisory bank risk rating system.[16] Planning is ongoing, with the intention of introducing the scheme in 2005.

37. **With a financial system crisis management framework instituted by the MAS, the financial system in Singapore seems prepared to deal with the initial impact of a wide variety of possible major disturbances.** The framework covers a range of possible eventualities including payment system disruptions, various real sector shocks with significant financial sector implications, regional instability and conflicts involving Singapore, and the failure of one or more systemically important institutions. The principal objective is to minimize disruption to critical financial market functions in the event of a crisis so that the system is able to continue to provide financial services to the public and confidence is maintained in the financial system and the Singapore dollar. Systemically important financial institutions have conducted contingency planning exercises.

C. Regulation, Supervision, and Observance of Standards and Codes

38. **The MAS is continuing to enhance its risk-based approach for regulation and oversight of financial institutions.** The risk-based approach is already well established for banks, and the regulatory minimum liquid asset requirement was made more flexible based on banks' liquidity risk management capabilities. The MAS is in the process of reviewing its framework for setting capital adequacy requirements that would take into account the risk profile and risk management capabilities of individual banks. The risk-based capital framework was also introduced for securities firms in 2002 and will be applied to the insurance industry in late 2004. Significant progress has also been made in consolidating different supervisory frameworks that govern various segments of the financial sector.

39. **Financial innovation and globalization present greater challenges for the MAS in supervising the financial sector.** It is important that the MAS continues to monitor closely the risks arising from new financial products, the growing foreign operations of local banks, and cross-border transactions. This would require the MAS to maintain sufficient resources to conduct thorough economic analysis and continue close coordination with foreign supervisory authorities. Moreover, up-to-date information on cross-border capital flows, financial institutions' risk exposures (including derivatives activities) and on the balance sheets of the household and corporate sectors is crucial for timely assessment of the vulnerability of the financial sector against the backdrop of a rapidly changing economic environment. The MAS

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[16] The proposed scheme would cover up to S$20,000 per depositor and per institution. The FSAP team found no significant weaknesses in the proposal.

was moving to standardize and enhance its data collection process to facilitate the monitoring of banks' derivatives activities.

40. **Singapore has developed a high level of technical competence and the institutional infrastructure that is necessary to effectively supervise its financial system.** Reflecting significant efforts made in recent years, the regulatory systems and supervisory practices exhibit a high degree of observance of international standards and codes across all segments of the financial sector (Box 7). While the legal and regulatory frameworks for risk-based capital requirements have been instituted, there is scope for further enhancements, some of which are already under way, including the above-mentioned introduction of a risk-based capital framework for the insurance industry.

41. **There are two specific areas where improvements could enhance the MAS' oversight capabilities.** First, although the current structure does not appear to have caused problems to date, there is a concern that the multiple official responsibilities of the Chairman of the MAS could give rise to conflicts of interest, which could compromise the MAS' accountability and independence.[17] Although there are institutional safeguards protecting the MAS from such conflicts and there is a long tradition of sound licensing and supervisory practices, there is scope for reducing these potential conflicts, such as moving to a more conventional structure of separate responsibilities. The authorities are reviewing the MAS Act to address these issues. Second, policy frameworks are generally well laid out and operating procedures are well defined, but the MAS could provide more information on how supervisory actions are taken in line with the risk-based supervisory framework. The MAS could also disclose more information about recent developments in the financial sector and on its supervisory activities to enable the public to better assess its supervisory performance (see Annex). The authorities are studying ways to disclose more information in these areas.

[17] The current Chairman of the MAS is also Deputy Prime Minister and Minister of Finance.

Box 7. Singapore: Main Findings of the Assessments of Observance of Key International Standards and Codes

- **BCP for Effective Banking Supervision:** Overall, the MAS has established a sound prudential and regulatory framework for effective supervision of its commercial banking sector and has achieved a high level of observance of the BCP. There are no weaknesses that raise financial stability concern.

- **IAIS Insurance Core Principles:** Singapore has a high level of observance of the IAIS principles. Significant initiatives are currently being developed in consultation with the industry—particularly the overhaul of the capital standards to a more comprehensive and risk-based approach with new rules giving specific attention to corporate governance and internal controls. The implementation and enforcement of these initiatives, which are well advanced, will further improve observance.

- **IOSCO Objectives and Principles of Securities Regulation:** Singapore has achieved a high degree of compliance with the IOSCO principles. The framework for the oversight and regulation of securities markets, intermediaries, issuers, and collective investment schemes is well developed, sophisticated, and meets international standards. The MAS should require periodic reporting of net asset values and ensure that a Collective Investment Scheme (CIS) operator has systems in place to calculate net asset values correctly.

- **CPSS Core Principles for Systemically Important Payment Systems (CPSIPS):** Singapore has a highly developed payment system. The MEPS—a systemically important payment system—is a reliable and robust real-time gross settlement system and exhibits significant observance of CPSIPS principles. The settlement risk of foreign exchange transactions in Singapore dollars has been further reduced by the inclusion of the Singapore dollar in the CLS in September 2003.

- **CPSS-IOSCO Recommendations for Securities Settlement Systems:** Neither the MAS Electronic Payment System-Singapore Government Securities (MEPS-SGS)—which clears and settles SGS on an real-time gross settlement basis—nor the Central Depository Private Limited (CDP)—which clears and settles equities and private debt securities—is subject to major vulnerabilities. While the MAS oversight objectives with respect to securities settlement systems are set out in various documents, it is recommended that the MAS publish a document on the oversight framework for securities settlement systems and its approach to its administration.

- **Transparency in Monetary and Financial Policies:** The transparency of monetary policy framework has improved substantially in recent years. Given the exchange rate regime-based monetary policy, however, the authorities remain cautious about publishing certain information on the monetary policy framework and monetary operations. For example, neither the weights used in the trade-weighted exchange rate index nor the precise limits of the band are disclosed. Similarly, the extent of MAS interventions in the foreign exchange market is not disclosed on a predetermined or timely schedule. Greater disclosure in these areas could be considered to the extent it does not compromise the monetary policy regime. The MAS has made steady progress toward improving transparency in financial policies in recent years and now meets many of the elements of the Transparency Code. The MAS could further improve transparency through providing more detailed information on recent developments in the financial sector and its supervisory activities in its regular publications, including regarding local financial institutions' overseas operations.

- **Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT):** Singapore now has in place a sound and comprehensive legal, institutional, and policy and supervisory framework for AML/CFT and the authorities have demonstrated a strong commitment to its effective implementation. Though some steps have been taken with the enactment of a domestic mutual legal assistance law and ongoing negotiations for several bilateral treaties, the effectiveness of cross-border mutual legal assistance needs to be improved as it relates to compulsory assistance at international request, including the provision of bank records. The Palermo Convention is signed but yet to be ratified. Some aspects of best practice for customer due diligence need to be specified more clearly and in greater detail, though implementation was observed in individual institutions.

D. Corporate Governance, Disclosure, and Accounting Standards

42. **Key initiatives have been taken to improve corporate governance.** The Council on Corporate Disclosure and Governance was formed in 2002 to promote good corporate governance in Singapore, strengthen the framework of disclosure practices and reporting standards, and prescribe accounting standards in Singapore. Since the beginning of 2003, companies listed on the SGX have been required to disclose their corporate governance practices and explain any deviations from the Code of Corporate Governance in their annual reports.[18] The MAS will also issue guidelines for local banks and direct insurers which will include additional principles and guidance notes to enhance the roles played by the Boards and Chief Executive Officers in carrying out their duties towards depositors and policy holders.

43. **Singapore has closely followed international best practices in accounting standards and disclosure.** Under the Financial Reporting Standards based on the International Accounting Standards, all listed companies with market capitalization of more than S$75 million are required to report quarterly financial results. Moreover, all listed companies will be required by 2006 to change audit partners and locally incorporated banks to change audit firms every five years.

V. Structural Issues

A. Challenges Confronted by Local Banks

44. **All three local banks see regional expansion as their preferred means of future growth and have expressed internal goals to increase their returns on equity.** The consensus view is that the domestic banking market is mature and unlikely to be a source of sustained future earnings growth, especially in light of increasing competitive pressure from foreign banks as a result of the liberalization of the domestic banking market. Thus, the local banks hope to continue expanding overseas operations especially in Asia.

45. **As their overseas operations expand, local banks will face new risks.** All local banks have developed the capacity to manage their expansion, and they appear to exercise reasonable prudence when they evaluate the risks in these new ventures. Local banks should be encouraged to further improve their risk-management capabilities and to conduct periodic stress testing—including effects on foreign operations—for management decision making.

46. **Local banks are conservatively managed based on measures of capitalization and liquidity.** While it is difficult to compare the relative safety and soundness of banks in alternative systems because profit and prudential measures are often not directly comparable, Bankscope data for 2001–02 suggest that Singapore banks are substantially better capitalized

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[18] The Code covers four main areas: (i) board matters; (ii) remuneration matters; (iii) accountability and audit; and (iv) communication with shareholders.

than most of the largest 100 banks in the world. Singapore's local banks are also consistently more liquid than many of the largest internationally active banks.

47. **The ultimate success of aspirations for growth and higher returns on equity may in part depend on future developments in MAS regulation.** Local banks have demonstrated an impressive record of profit stability as measured by return on assets. Their returns on equity, however, have been diluted by high capital ratios (Figure 6). All local banks voluntarily maintain a comfortable buffer of capital above MAS regulatory minimums, which are significantly higher than the Basel minimum CAR of 8 percent.[19] The MAS is reviewing: (i) the rules for computing banks' CARs; (ii) the regulatory minimum Tier 1 capital requirement of 8 percent and total capital requirement of 12 percent; and (iii) the process of setting bank specific capital requirements based on each bank's risk profile and risk management capabilities.

B. Corporate Bond Market Development

48. **The development of bond markets has been a key component of the government's policy to enhance Singapore's role as an international financial center.** Despite continued budget surpluses, the government has steadily increased its issuance of debt securities to promote the development of bond markets. In the past few years, the MAS implemented a series of initiatives to develop fixed-income markets, including tax incentives[20] and liberalizing the CPF Investment Schemes to enable CPF members to invest part of their CPF savings in insurance products, unit trusts, equities, and fixed-income securities. These steps, together with a pick-up in mergers and acquisitions, helped boost new corporate bond issues in 2000–01 (Figure 7). After a sharp decline in 2002, new corporate bond issues rebounded in 2003 owing to a large increase in non-Singapore dollar issues. The volume of outstanding corporate bonds has increased steadily from 1998 to 2003.

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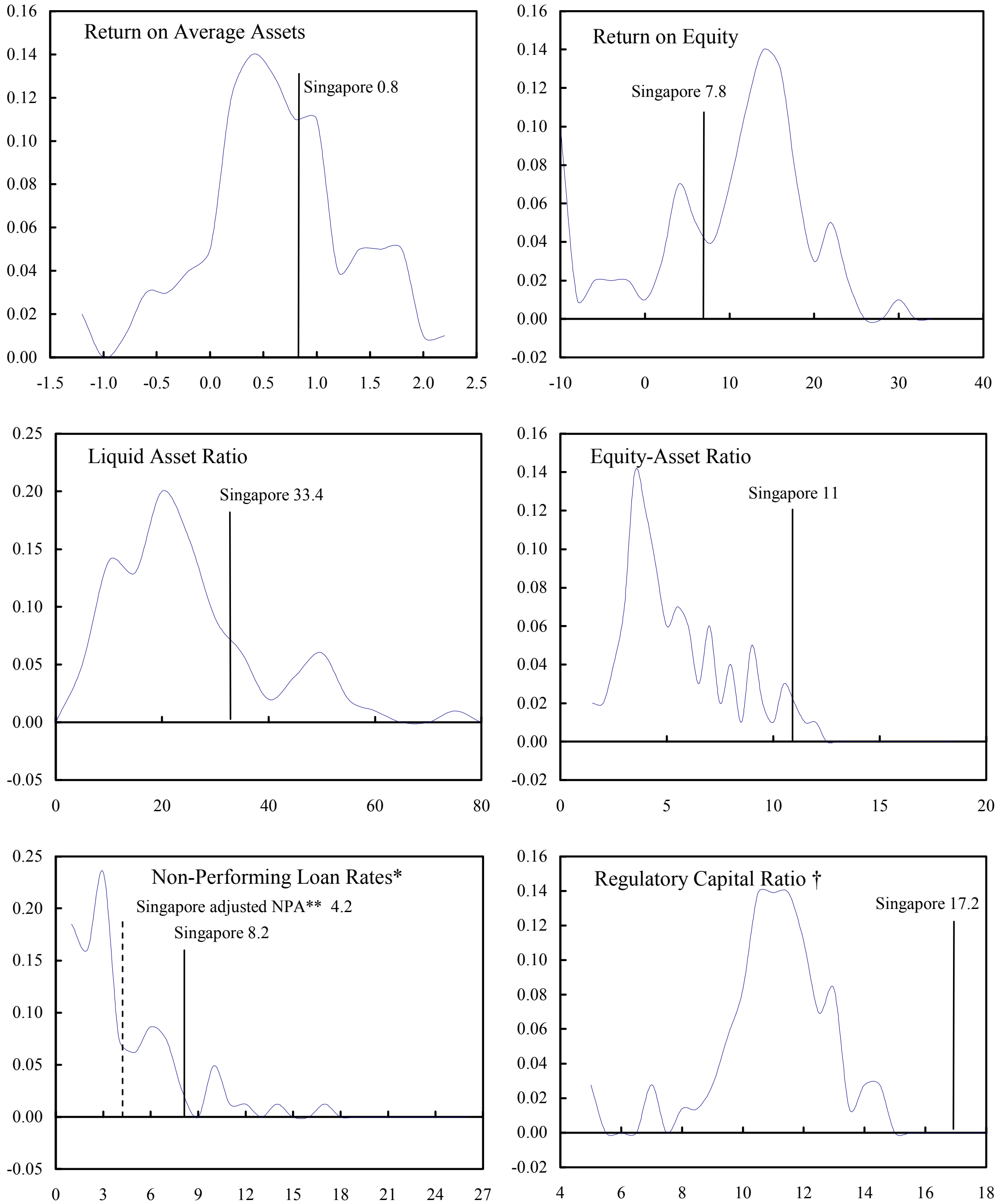
[19] Local banks are currently required to maintain a minimum total risk-based capital ratio of 12 percent and a Tier 1 capital of 8 percent, and the MAS is empowered to vary a bank's minimum capital adequacy ratio if risks merit additional capital.

[20] Income derived by financial institutions from arranging, underwriting or distributing any qualifying debt securities (which include SGS, corporate bonds, notes, commercial papers, and certificates of deposits) is exempt from taxation. Interest income earned from those securities by nonresidents is exempt from withholding tax, while a concessionary rate of 10 percent is levied for such interest income earned by companies that are tax resident in Singapore.

Figure 6. Distribution of Profit and Prudential Measures for the 100 Largest Banks, 2002

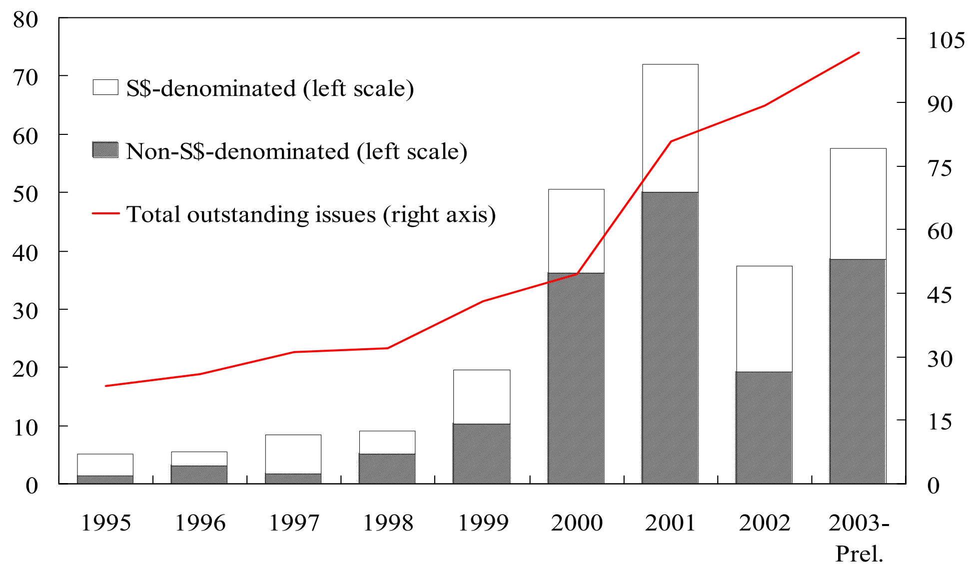


* Distribution based on the 81 of the 100 largest banks with data reported in the Bankscope database.
** Non-performing asset ratio

† Distribution based on the 72 of the 100 largest banks with data reported in the Bankscope database.

Sources: Bankscope; Monetary Authority of Singapore; and Staff estimates.

Figure 7. Singapore: New Corporate Bond Issuance, 1995–2003
(In billions of Singapore dollars)



Source: Monetary Authority of Singapore.

49. **As in many other countries, Singapore faces challenges in further deepening the corporate bond market.** Despite a number of measures implemented in the past few years, the corporate bond market in Singapore is not yet at an advanced stage of development as reflected by the sharp drop in the value of new bond issuance in 2002. The market is constrained by the size and structure of the domestic economy. Market representatives indicated that ample liquidity in the banking system has recently dampened corporate bond issuance.

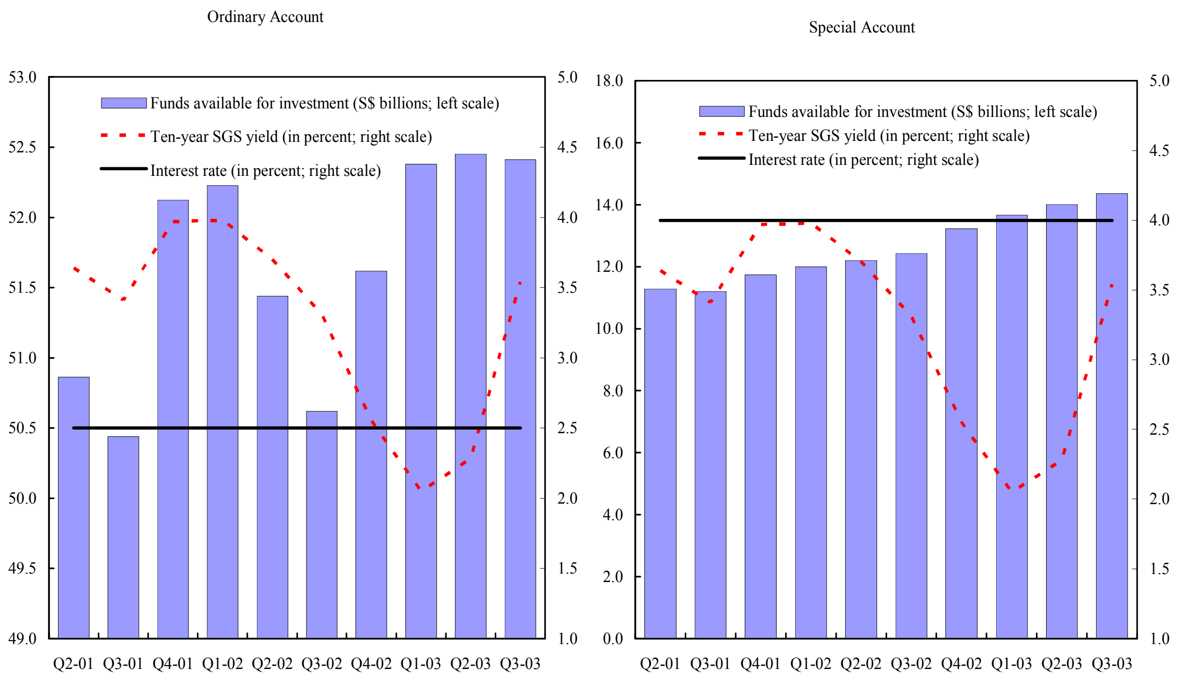
50. **To support the further development of the corporate bond market, it is recommended that the authorities review and address the following issues:**

- **Limited use of credit ratings may hinder the further development of the corporate bond market by limiting the set of potential investors.** While large corporations routinely access the international bond market, second-tier companies are either too small to tap the bond market or are highly reluctant to obtain ratings. Foreign fund managers are often required to avoid unrated bond issues. The risk-based approach—which is in place in the banking and securities sectors and will be introduced for the insurance sector in 2004—provides some incentives to obtain ratings, since unrated bonds are subject to higher risk charges. More extensive use of credit ratings would facilitate institutional investors' risk management and improve tradability of corporate bonds, thereby increasing their demand. It would also help less-established companies access competitive funding.

- **The CPF investment policy may constrain domestic funds available to the corporate sector.** The CPF currently invests its undrawn balances in special nonmarketable SGS, thereby locking up a large portion of domestic long-term funds away from capital markets. There may be scope for allowing the CPF to replace some nonmarketable SGS with high-quality long-term corporate bonds carrying higher yields. Such a change would benefit the private sector by supplying long-term funds which are not usually provided by banks.

- **The officially guaranteed rates of return on CPF accounts are likely to reduce the demand for corporate bonds in a low interest rate environment.** The guaranteed rates—2.5 percent in the ordinary account and 4.0 percent in the special account—currently exceed comparable market rates and thus could encourage CPF members to keep their savings in CPF accounts rather than investing in securities. At end-September 2003, such uninvested CPF funds amounted to about S$67 billion (Figure 8). Aligning the guaranteed CPF rates of return more closely with market rates on long-term investments would remove the distortion, and would, over the long run, likely raise the return on CPF savings.

Figure 8: Singapore: Funds Available Under CPF Investment Schemes, 2001–2003



Sources: Singapore, Central Provident Fund; Monetary Authority of Singapore; and Singapore Government Securities.

Financial System Overview

A. Institutions

51. **Singapore has about 580 local and foreign financial institutions.** They offer a wide range of financial products and services, including trade financing, loan syndication, foreign exchange trading, derivative products, securities trading and underwriting, fund management, and insurance services. In international bank lending, Singapore banks represent about 3 percent of total international bank assets at end-2002, compared with Hong Kong SAR (2.9 percent) and London (18.7 percent).[21] Singapore ranks fourth in foreign exchange trading in the world and sixth in over-the-counter derivatives trading. The equity market is also well developed, with more than 550 companies listed on the SGX. The financial sector accounted for about 11 percent of GDP and 5 percent of total employment in 2002.

52. **The financial sector is dominated by the banking sector**, in particular the ADM—an offshore banking sector. The liberalization of the financial industry since 1997 and mergers of international banks with branches in Singapore have led to some consolidation of the sector and changed its composition. The number of banks declined from 155 in 1997 to 115 in September 2003, and a similar trend was also observed in merchant banks and insurance and finance companies. Total assets of financial institutions have risen marginally since 1997.

Commercial banks

53. **Commercial banks dominate the financial system, accounting for 86 percent of total financial sector assets at end-September 2003.** The banking system consists of 5 local banks (owned by 3 local banking groups) and 110 foreign bank branches. Of these 110 foreign banks, 22 are designated by the MAS as full banks (including 6 qualifying full banks), 38 as wholesale banks, and 50 as offshore banks. These designations reflect different privileges and restrictions imposed by the MAS as licensing conditions. Local banks are granted the widest range of permissible banking activities, while foreign banks are subject to varying restrictions on domestic retail operations.

54. **In Singapore, domestic banking is separated from offshore banking.** Banks operating in Singapore book their banking transactions in either the Domestic Banking Unit (DBU) or Asian Currency Unit (ACU), which are essentially segregated accounting units set up to encourage the non-Singapore dollar offshore business through concessionary tax rates. Banks are required to record their transactions in Singapore dollars in the DBU, while transactions in foreign currency may be booked in either the ACU or the DBU. The local bank branches and subsidiaries operating overseas are not required to segregate their books into the ACU or DBU accounting units. To the extent that they have transactions with the

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[21] See Bank for International Settlements, *Quarterly Review*, Basel, June 2003.

parent bank in Singapore, these would be reflected in the parent bank's operations in the ACU or DBU.

55. **ACUs are subject to more favorable regulatory and tax treatment than DBUs.** ACUs are exempted from certain provisions of the Banking Act, including the minimum cash balance and the statutory liquidity requirements, which are imposed on DBUs. Moreover, ACU income is subject to a concessionary tax rate of 10 percent for non-residents. No reports on individual deposits and loans are required, but the size of assets and liabilities is subject to limits set by the MAS.

56. **Commercial banks in Singapore are allowed to undertake universal banking.** Thus banks can offer a wide range of financial services in both traditional and investment banking. Banks are divided into three categories: full banks, wholesale banks, and offshore banks.

- **Full banks** can carry out the whole range of banking business approved under the Banking Act but face limits on the number of their branches and automated teller machines (ATMs). At end-September 2003, there were 27 full banks, of which 5 were domestic banks and 22 foreign banks. Six of the 22 foreign full banks have been granted qualifying full banks privileges. Qualifying full banks are permitted to establish up to 15 banking locations, of which up to 10 can be branches and the remainder off-premise ATMs. They can relocate their existing branches freely and share an ATM network among themselves.

- **Wholesale banks** may engage in the same banking operations as full banks, except that they are not allowed to accept Singapore dollar term deposits of less than S$250,000 per deposit from nonbanks and to pay interest on Singapore dollar current accounts held by resident individuals. At end-September 2003, there were 38 wholesale banks; all were foreign bank branches.

- **Offshore banks** are allowed to carry out the same banking operations in foreign currency as full banks. However, the scope of transactions in Singapore dollars with residents is slightly more restricted than that for wholesale banks. At end-September 2003, there were 50 offshore banks.

Merchant banks

57. **Banks may also operate as merchant banks.** At end-September 2003, there were 51 merchant banks, accounting for about 5 percent of total financial sector assets. Merchant banks, which are governed by the MAS Directives and Notices to Merchant Banks, are typically involved in offshore banking, corporate finance, underwriting of share and bond issues, mergers and acquisitions, and portfolio investment management. Merchant banks cannot take sight or savings deposits in Singapore dollars. With the MAS' approval, most merchant banks operate ACUs.

Finance companies

58. **Finance companies make up a small segment of Singapore's financial sector**, with about 1 percent of total assets. They are typically involved in providing small-scale financing, including mortgage loans and consumer credit for the purchase of cars and other durable goods. Finance companies are licensed under the Finance Companies Act, and their operations are supervised by the MAS.

Insurance industry

59. **A large number of major international insurers, reinsurers, and intermediaries, providing a full range of insurance services, are based in Singapore.** There are 140 insurance companies, including 6 life insurers, 43 nonlife insurers, 7 composite insurers (holding both life and nonlife insurance license), 33 reinsurers, and 51 captive insurers. Two life insurers, 8 nonlife insurers, 4 composite insurers, and 5 nonlife reinsurers are locally owned companies; the other insurers are either subsidiaries or branches of foreign companies.

60. **Despite substantial growth in the past few years, the insurance sector is small, accounting for about 6 percent of total financial sector assets at end-September 2003.** Direct insurers account for more than 90 percent of total assets of the insurance sector, and the reinsurance business is negligible. Regarding offshore business, the offshore life insurance sector is immaterial, but for nonlife insurance the offshore sector accounts for just under 20 percent for direct insurers and 80 percent for reinsurers in terms of assets. In addition, Singapore has remained the top captive domicile in the Asia Pacific region with 51 captive insurance companies, of which all but one were subsidiaries of foreign companies.

61. **The size of the domestic market in terms of premiums is moderate by world comparisons.** According to Swiss Re Sigma, with total premiums of US$4 billion, Singapore ranked 34th in the world, 9th in the Asian region and 2nd in South East Asia in 2001. Premiums per capita at US$959 ranked 24th in the world and 5th in the region, and insurance penetration (gross premiums written/GDP) at 4.6 percent was below world and regional averages (7.8 percent and 7.6 percent, respectively).

Pension system

62. **The CPF dominates the pension system in Singapore.** The CPF was established in 1955 as a mandatory, fully-funded pension scheme. Its high contribution rates (from October 2003, set at 33 percent, with 20 percent paid by employees and 13 percent by employers) have contributed to Singapore's very high national savings rate. CPF balances of S$102 billion (about 66 percent of GDP) as of September 2003 accounted for over 25 percent of households' financial assets. Given the large size of the CPF balances, changes to the CPF system have had a significant impact on the economy. The housing scheme, which was introduced in 1981 to allow members to use their CPF savings to purchase houses, has stimulated housing demand, resulting in Singapore's high home ownership rate (94 percent). The CPF Investment Schemes, introduced in 1986 and enhanced in 2001, is aimed at giving

CPF members more control over their savings by allowing them to invest in a wider range of investment instruments to enhance returns on their CPF assets. This has contributed to the growth of asset management and life insurance businesses and increased incomes of distributors (including banks) resulting from sales of unit trusts.

Asset management industry

63. **Singapore has evolved into a major regional asset management center over the past few years in response to the government's efforts to develop this industry** and now hosts more than 200 asset management firms. Total assets managed by Singapore-based financial institutions increased from S$151 billion in 1998 to S$344 billion in 2002. This increase can be attributed to transfers of regional portfolios to Singapore for management and continued expansion of management and advisory activities for the pan-Asian region in light of Singapore's sound legal and tax environment and highly developed infrastructure. Some asset managers also centralized their regional trading and back office functions in Singapore. Of the S$183 billion of discretionary assets as of end-2002, 30 percent came from Singapore and the rest from abroad—mainly Europe and the United States.

Other entities

64. **The Government of Singapore Investment Corporation (GIC) is the largest investment company in Singapore and is wholly owned by the government.** It manages Singapore's state assets by investing abroad in equities, fixed income and money market instruments, and real estate. Assets managed by the GIC have reportedly grown to more than US$100 billion, but details of its investments have not been made public. Together with the MAS, the GIC outsourced S$35 billion to external fund managers to promote the development of Singapore's fund management industry.

65. **The Housing and Development Board (HDB) provides housing loans.** The HDB, established in 1960 as a statutory board of the Ministry of National Development, also develops public housing for sale and rental and constructs and manages commercial properties. About 85 percent of Singaporeans currently live in HDB housing, compared with 9 percent in 1960. The HDB provides housing loans at a concessionary interest rate (currently 2.6 percent), which is set at 0.1 percentage point above the rate on CPF ordinary account balances. The HDB also offers loans at market rates for buyers who are not eligible for subsidized loans. The outstanding amount of HDB's mortgage loans was S$64.2 billion (about 41 percent of GDP) as of June 2003. The HDB is financed directly by the Ministry of Finance and through bond issuances.

B. Markets

66. **The Singapore government has introduced a number of measures to diversify and deepen its financial market.** It has been actively promoting the development of capital markets to enhance the country's role as a regional financial center and to reduce the reliance on bank financing. While capital markets have grown rapidly, their growth prospects face challenges stemming from the relatively small size of the domestic economy, the lack of a

hinterland, and the competition from other regional financial centers. Singapore has maintained its position as a global treasury center with several global players consolidating their foreign exchange and derivatives business in the Asian time zone in Singapore.

Foreign exchange market

67. **The foreign exchange market in Singapore—the fourth largest in the world—has benefited from a time zone advantage and the presence of a large number of foreign banks and multinational corporations.** The foreign exchange daily turnover averaged US$96 billion in 2002 and surged to US$121 billion in the first nine months of 2003, as several global players consolidated their foreign exchange business in the Asian time zone in Singapore. Foreign exchange trading in Singapore continued to be dominated by the G3 currencies. Spot and swap transactions accounted for about 90 percent of total trading; the rest included forward, futures, and options contracts. About 90 percent of total turnover is accounted for by financial institutions (17 percent by Singapore-incorporated institutions).

Money and bond markets

68. **The Singapore money market is liquid and dominated by the interbank market in foreign currency.** The interbank market mainly consists of short-term interbank deposits and lending denominated in foreign currency. Given the excess funds available in the Singapore economy, the ADM is an important center for mobilizing interbank funds globally. In recent years, most of the interbank loans were directed to Europe.

69. **The SGS market continued to grow with the help of a number of steps taken by the authorities to develop the market.** The outstanding SGS volume was S$62 billion (39.8 percent of 2002 GDP) at end-September 2003, and average daily trading volume rose to S$2.7 billion for the first nine months of 2003. The SGS repo market grew in tandem; average daily trading volume reached S$2.6 billion for the first nine months of 2003.

70. **The corporate bond markets encompass the Asian dollar bond market and the Singapore dollar corporate bond market.** The total outstanding volume was S$109.3 billion (outstanding Singapore dollar corporate bonds of S$54.8 billion and outstanding foreign currency-denominated bonds of about S$54.5 billion) at end-June 2003. Major issuers in the Singapore dollar corporate bond market were large Singapore corporations (including GLCs), financial institutions, and statutory boards. The bulk of outstanding Asian dollar bonds was commercial paper and fixed rate notes with short maturities. Fixed-rate bonds and notes also have dominated the Singapore dollar corporate bond market. Structured notes issued included asset-backed securities, bank subordinated debt, equity-linked notes, credit-linked notes, dual currency notes, interest rate linked notes, and collateralized loan obligations. Secondary bond markets are relatively illiquid since the bulk of the bonds are held until maturity.

Equity and derivatives markets

71. **Singapore's equity and derivatives markets are well developed.** The SGX was formed in 1999 by the merger of the Stock Exchange of Singapore and the Singapore International Monetary Exchange. Equities are traded on its Securities Trading Division (SGX-ST) and derivatives (including a broad range of international futures and options) on its Derivatives Trading Division (SGX-DT). SGX also has linkages with several international exchanges, including a co-trading linkage with the Australian Stock Exchange, a mutual offset system linkage with the Chicago Mercantile Exchange, and a joint venture with the American Stock Exchange for the trading of exchange traded funds. As of end-September 2003, total stock market capitalization was S$487 billion (313 percent of 2002 GDP), and 556 companies were listed on the SGX-ST.[22] In line with improving stock market sentiment, the market for initial public offerings has been active, with 44 new listings recorded on SGX-ST during the first three quarters of 2003. Reflecting the volatility in global markets and several new products launched recently, trading activity on the SGX-DT has also been robust, with average daily turnover in the first three quarters of 2003, increasing by 7 percent year-on-year.

C. Payment and Settlement Systems

72. **Singapore has one of the most developed payment infrastructures in the world.** The MEPS is a real-time gross settlement system (RTGS) designed for high-value interbank funds transfers and settlement of SGS. The MEPS handles about 95 percent of the total value of all electronic transactions and noncash payments in Singapore. The two main retail payments clearing arrangements are the Network for Electronic Transfers Singapore for Electronic Funds Transfer at Point of Sale, e-money and ATM networks, and the Automated Clearing House operated by Banking Computer Services for checks and interbank GIRO transfers. Several initiatives were taken to further develop Singapore's infrastructure for payments. The Check Truncation System became fully operational in July 2003, enhancing the efficiency of check clearing. To develop a safer foreign exchange settlement environment, Singapore enacted the Payment and Settlement Systems (Finality and Netting) Act in December 2002, which paved the way for the participation of major local banks in CLS in December 2002. The Singapore dollar was included as a CLS settlement currency in September 2003. Work is under way to clarify the MAS' role in payments and to enhance the MAS' oversight function.

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[22] At end-2002, 812 companies were listed in Hong Kong SAR and 2,824 on the London Stock Exchange, with market capitalizations of 282 percent and 297 percent of GDP, respectively.

73. **The infrastructure for clearing and settlement of securities and derivatives is well developed.** MEPS-SGS is the central depository for Singapore government bonds and bills. It offers an RTGS facility on a delivery-versus-payment basis and is therefore linked to MEPS-Interbank Funds Transfer. The CDP, a subsidiary of the SGX, clears and settles transactions in equities and private debt securities executed on the Exchange, as well as transactions in private debt securities done in the over-the-counter market. These securities settlement systems are robust and do not give rise to major systemic risks. Work is underway to improve the efficiency of MEPS-SGS by the implementation of a Society for Worldwide International Financial Telecommunication (SWIFT) channel, and an intraday liquidity facility to be introduced in the near future will improve the liquidity on the cash side.

D. Regulation and Supervision

74. **The MAS serves both as Singapore's central bank and as a unified supervisory and regulatory authority for all banks and nonbank financial institutions.** The MAS has developed a sound prudential and regulatory framework to effectively supervise the financial system. On July 1, 2003, the MAS took over the responsibility for on-site inspection of SGX member firms from the SGX to enhance clarity in regulatory responsibilities. Progress was made in bringing about greater consistency in standards across banks, insurance companies, and securities firms. The SFA streamlined and consolidated supervision of the various types of financial firms active in the securities and futures markets. The FAA similarly consolidated and streamlined the different regulatory regimes governing the provision of financial advisory services for investment products, including the sale of unit trusts and life insurance. The SFA and FAA have enhanced the MAS' enforcement powers and inspection rights. The risk-based capital framework is in place for banks and securities and futures intermediaries, and will be applied to the insurance industry in 2004.

SINGAPORE—FSAP STRESS TESTING

75. Stress testing exercises were coordinated by the MAS and stress test exposure estimates were calculated directly by participating institutions. The stress test assumes two scenarios, one that includes a simulated global growth recession, and the other a global growth recession that assumes additional domestic pressures arising from terrorist attacks (see Appendix Table 1). The time horizon for the shocks is one year, and the stress test estimates reflect each participating institution's condition at the end of a full year. Stress test calculations are based on end-2002 data.

Banking sector stress tests

76. The stress test included three local banking groups and three foreign bank branches that are considered systemically important by the MAS based on: (1) the magnitude of non-bank deposits; (2) the magnitude of interbank borrowings; and (3) the importance of the bank in domestic payment system operations. Stress exposures included all major bank and finance subsidiaries for local banks, and all positions booked and managed in Singapore for foreign bank branches.

77. Market risk stress estimates included the marked-to-market valuation effects of changes in equity, interest rate, and foreign exchange rate factors on all DBU and ACU trading book and foreign exchange positions, derivatives positions, and equity investments in the banking book. Banking book interest rate risk was calculated by simulating stress scenario effects on projected net interest income. For foreign branch banks, the trading risk estimates include all trading book positions and derivative assets that are booked and managed by the branch.

78. Credit risk exposure estimates are based on each bank's entire banking book including all ACU and DBU book positions and material off-balance-sheet derivative positions and committed guarantees. Using internal bank guidelines, which are consistent with MAS Notice 612, loss exposures and specific loan loss provisions are estimated by reclassifying credits following a stress shock. Corporate credit risk exposures were estimated by analysts using bank loan classification policies to sort credits according to interest coverage, explicit guarantees, implicit support, and other measures of credit quality.

Insurance sector stress tests

79. A total of 10 insurance companies, deemed to be systemically important by the MAS, were selected to participate in the stress test. The participating companies represented about 85 percent of the domestic life insurance sector by assets and 77 percent by gross premium and 45 percent of the domestic general insurance sector by both assets and gross premiums. Stress testing exposure estimates covered both the Singapore Insurance Fund and the Offshore Insurance Fund for each company and separately for life insurance and nonlife insurance as applicable. Stress test results included estimates of their position against the minimum solvency margin requirements.

Table 1. Scenarios for Market and Credit Risk Stress Tests 1/

(In percentage of change per annum, unless otherwise noted)

Variable	Scenario 1 Global Weakness	Scenario 2 Global Weakness and Terrorism
Assumed real GDP growth rate		
Singapore	0.0	-1.7
Regional countries	2.0	-2.5
North Asian countries	2.8	2.8
Advanced countries	1.5	1.5
Singapore's sectoral growth rates		
Manufacturing	-1.0	-2.0
Construction	-2.0	-4.0
Financial and business	-1.0	-3.0
Commerce	1.0	-2.0
Transportation and communications	2.0	1.0
Property prices (private residential)		
Singapore	-10.0	-15.0
Malaysia and Indonesia	-5.0	-15.0
Thailand	-5.0	-10.0
Rest of the world	-5.0	-5.0
Singapore commercial and industrial	-10.0	-15.0
Unemployment rate (percent of labor force) 2/		
Singapore	5.5	6.0
Malaysia	4.5	5.5
Indonesia	9.0	9.5
Philippines	11.0	13.0
Thailand	4.0	4.5
Korea	5.0	5.0
Taiwan Province of China	6.0	6.0
Hong Kong SAR	8.0	8.0
China	6.0	6.0
Equity prices		
Singapore, Malaysia, Thailand, Indonesia, and the Philippines	-10.0	-20.0
Rest of the world	-5.0	-5.0
Risk-free interest rates (changes in basis points) 3/		
Singapore and selected Asian countries		
Short-term (< or = 3-months) 4/	-60.0	150.0
Medium-term (1 year)	0.0	100.0
Long-term (10 years)	0.0	50.0
Very long-term (>10 years)	0.0	50.0
Rest of the world 5/		
Short-term (< or = 3-months)	-80.0	-80.0
Medium-term (1 year)	-20.0	-20.0
Long-term (10 years)	0.0	0.0
Very long-term (>10 years)	0.0	0.0
Exchange rate (per S$; percent change)		
Vis-à-vis regional, South Asian, and Latin American currencies	-1.0	3.0
Vis-à-vis North Asian currencies 6/	-1.0	-2.0
Vis-à-vis other currencies 7/	1.0	-3.0
Additional Variables for Insurance Stress Testing		
Corporate bond prices		
Singapore and selected Asian countries	-2.0	-7.0
Rest of the world	-2.0	-3.0
Receivables		
Outstanding premium and agents' balances	-10.0	-20.0
Loans to and other receivables from		
Manufacturing sector	-10.0	-10.0
Other sectors	-5.0	-10.0

Sources: Monetary Authority of Singapore; and Staff estimates.
1/ All currency pegs (e.g., the ringgit peg to the U.S. dollar) are assumed to continue.
2/ Rest of the world: the growth rate was assumed to be 2 percentage points above average of Q1–Q3 2002 (if quarterly data available) or 2.5 percentage points above 2001.
3/ Selected Asian countries include Indonesia, Malaysia, Philippines and Thailand.
4/ For scenario 1, the drop of 60 basis points was subject to a floor of 0.5 percent for the base rate. If the base rate at end-December 2002 were already lower than 0.5 percent, the December 2002 rate would be used.
5/ Changes in short-and medium-term rates were subject to a floor of 0.001 percent in the base rate.
6/ China, Korea, and Taiwan Province of China.
7/ Includes advanced economies, Hong Kong SAR, and Malaysia.

Summary Assessments of Observance of Financial Sector Standards and Codes

- This section contains summary assessments of adherence to the major international standards and codes applicable to the financial sector. The assessments have helped to identify the extent to which the regulatory and supervisory frameworks have been adequate to address the potential risks in the financial system. They have also provided a source of priority areas for ongoing legislative revision, and recommendations for improved financial regulation and supervision in various areas.

- Detailed assessments of standards were undertaken based on a collegial peer review process as part of the FSAP by Susan Hopkins (Office of the Comptroller of the Currency, United States) and Olli Mattinen (Financial Supervisory Authority, Finland) for the *Basel Core Principles for Effective Banking Supervision;* Andrea Corcoran (Commodity Futures and Trading Commission, United States) for the *IOSCO Objectives and Principles of Securities Regulation*; Peter Braumuller (Financial Market Authority, Austria) and Craig Thorburn (World Bank) for the *IAIS Insurance Core Principles;* Jan Woltjer (Netherlands Bank) for the *Core Principles for Systemically Important Payment Systems* and the *IOSCO-CPSS Recommendations for Securities Settlement Systems;* Ian Woolford (Reserve Bank of New Zealand) with the assistance of Mark O'Brien (IMF) and the sectoral experts for the *IMF Code of Good Practices on Transparency in Monetary and Financial Policies;* and Terry Donovan, Margaret Cotter (both IMF) and Paul Ryan (Australian Transaction Reports and Analysis Center) for the *AML-CFT Standards*.

- The Singapore authorities were requested to complete self-assessment questionnaires for the standards and codes and these and other information were made available to the peer group of experts. During the missions, the responses to the questionnaires and self-assessments of compliance with the standards and principles were clarified and checked through subsequent discussion with the authorities and market participants in critical areas.

I. Basel Core Principles for Effective Banking Supervision

A. General

82. The BCP for Effective Banking Supervision was assessed based on the Core Principles Methodology published by the Basel Committee on Banking Supervision. The main sources for assessment include: the MAS self-assessment of compliance with the BCP; relevant laws and regulations; supervisory guidelines, notices, and circulars issued by the MAS; the inspection manual, examination reports, and MAS internal documents; and discussions with the MAS staff, commercial banks, and an accounting firm.

Institutional and macroprudential setting, market structure—overview

83. Of the 115 commercial banks, 27 are designated by the MAS as full banks, 38 as wholesale banks, and 50 as offshore banks. These designations reflect the level of privileges or restrictions set by the MAS as a licensing condition. A full bank designation allows the widest range of permissible banking activities. The five local commercial banks, owned by three local banking groups, are all designated as full banks. Foreign full banks are subject to restrictions that are not imposed on local full banks.

84. The MAS is Singapore's central bank and unified financial sector regulator. It has the duty to foster a sound and progressive financial sector and is accountable for the prudential oversight of the banking and insurance industries as well as the trading of securities, and futures; and the supervision of investment advisory and fund management activities as well as payment operations of banks and theAutomated Clearing House. The MAS is empowered, but not obligated, to provide lender of last resort facilities to a bank if it determines that such action is necessary to safeguard systemic stability.

General preconditions for effective banking supervision

85. Singapore's legal system follows the English common law tradition and incorporates well-established and globally accepted principles of contract, commercial, and banking law. The legal system operates efficiently, enabling creditors to secure interests in collateral or force bankruptcy or receivership status on delinquent debtors without undue delays or costs.

86. Singapore's Statements of Accounting Standards (SAS) follow closely the International Accounting Standards. Singapore's Standards of Auditing are based on the international standards of the International Federation of Accountants, and Singapore banks employ international accounting firms as auditors. The MAS must approve a bank's external auditor, and auditors have a legal responsibility to report any problems or issues of concern to the MAS.

87. Singapore banks face a statutory requirement for continuous disclosure under the SFA. Under, the listing rules of the SGX, Singapore banks are required to disclose their

corporate governance practices, and explain any deviations from the Code of Corporate Governance guidelines in their annual reports.

B. Main Findings

88. Overall, the MAS has established a sound prudential and regulatory framework for effective supervision of its commercial banking sector, and has achieved a high level of compliance with Basel Core Principles.

Objectives, autonomy, powers, and resources (CP 1)

89. The MAS Act, the Banking Act, and the implementing regulations and rules including guidelines, notices and circulars, empower the MAS to license and supervise commercial banks, to establish and enforce legal and prudential standards, to impose fees, to set budget and hire staff, and to share information between supervisors.

90. The MAS Act requires a board of directors to be established and to be responsible for the policy and general administration of its affairs. It requires the board of directors, including the chairman, to be appointed by the elected President of Singapore on the recommendation of the Cabinet. The directors have a term of office of three years and can be reappointed. The current Chairman of the MAS is concurrently the deputy prime minister and the Minister for Finance. The Managing Director is entrusted and empowered by legislation to make decisions and exercise all powers and do all acts which may be exercised or done by the MAS, and to conduct the day-to-day administration of the MAS. The managing director is appointed by the president, on the recommendation of the Public Service Commission. The MAS is self-financed and its budget is approved by the President.

91. The Banking Act requires merger and substantial shareholdings applications to be approved by the Minister. Merger and substantial shareholdings applications are evaluated by the MAS and assigned a recommendation of approval or disapproval based on prudential standards including fit and proper, and safety and soundness criteria. The Minister has the additional responsibility to consider whether the merger or substantial shareholder serves the national interest which may include concentration or anti-competition issues.

92. The multiple official responsibilities of the Chairman of the MAS could give rise to conflicts of interest. There are institutional safeguards protecting the MAS from such conflicts and the MAS' supervision of banks does not appear to have been compromised by the current structure. There is also a long tradition of sound licensing and supervisory decisions. Nevertheless, to safeguard Singapore's track record of good performance and the future integrity of the financial policy framework, the FSAP team recommends moving to a more conventional structure of separate responsibilities, or alternatively some other structure which would incorporate recognition of potential conflicts of interest and transparent measures to minimize them.

Licensing and structure (CPs 2–5)

93. The MAS is both the licensing and supervisory authority. In the licensing process, the applicant has to submit to the MAS information such as ownership structure, strategic and business plan, financial statements, experience of the board of directors and management, framework of risk management and monitoring systems, and prior consent of home supervisor if the applicant is a foreign bank. The MAS evaluates financial strength, the suitability of shareholders, directors and management, and home or host supervision regime. The criteria for issuing licenses are consistent with those applied in ongoing supervision.

94. According to the Banking Act, any person who wants to hold shareholdings in a bank incorporated in Singapore or in a financial holding company of 5 percent, 12 percent and 20 percent or more or become indirect controller must obtain prior approval of the Minister. The MAS is involved in the evaluation process. MAS approval is also required for banks in Singapore to acquire or hold any equity investment in a single company, the value of which exceeds in the aggregate 2 percent of the capital funds of the bank or such other percentage as the MAS may prescribe. A Singapore bank shall not either acquire or hold a stake of more than 10 percent voting rights or share capital in any company without MAS approval.

Prudential regulations and requirements (CPs 6–15)

95. Overall, prudential regulations and requirements are sound. The capital adequacy rules on components, computation, and consolidation broadly conform to the Basel Capital Accord for credit and market risks. The legal minimum CARs are more conservative than the Basel Accord. The MAS requires banks to maintain a minimum level of capital funds and can impose higher capital requirement based on supervisory issues.

96. The credit, market, liquidity and other material risks of commercial banks are independently evaluated and verified by the MAS through regular on-site examinations and off-site monitoring. Risk management processes, bank policies, procedures and practices related to ongoing management of these risks are evaluated and verified.

97. The definition of "closely related group" could be more comprehensive and the law and regulations do not clearly state that all the claims are to be included in large exposures. Credit facilities extended to a parent company are in most cases combined with credit facilities given to all subsidiary companies and other companies over which it has control or influence. If the parent company is not borrowing, however, the credit facilities of its subsidiaries and those companies under its control are generally not combined. Some credit facilities related to Singapore's exports and imports are not included in large exposures.

Methods of ongoing supervision (CPs 16–20)

98. The MAS' risk-based supervision approach prioritizes supervision based on the risk profiles of banks and emphasizes the banks' risk management systems and practices. Supervision includes on-site inspection and off-site monitoring. The frequency of on-site inspection is based on the risk profile and supervisory rating of the bank and the overall

systemic importance of an institution. Regular off-site supervision analyzes the financial condition of the bank based on regularly submitted returns, internal audit reports, foreign supervisory reports, market intelligence as well as discussions with bank management, internal and external auditors.

99. Local banks are supervised on a consolidated basis. Their assets, liabilities, profits and losses are required to be aggregated with those of related corporations and companies in which the bank has major stakes. Prudential limits such as CARs, large exposure limits, and a property exposure limit, are imposed on a group basis.

100. External auditors review annual statutory returns. As part of off-site supervision, the MAS reviews reports submitted by external auditors, which are based on the annual audits of banks and which are used to evaluate their audit standards. During on-site examinations, the MAS assesses the quality of the external auditors' work. Meetings with the boards of directors and senior management are scheduled at least once a year to discuss operational matters and supervisory findings. Bilateral meetings with external auditors are held twice a year. Contacts with bank internal auditors and middle management are held more frequently.

Information requirement (CP 21)

101. Records and reporting requirements are based on the Banking Act, the Company Act, and the notices issued by the MAS. The annual accounts of a bank must be audited by an external auditor and must be in accordance with the provisions of the Companies Act and SAS. The latter has been adopted by the Council on Corporate Disclosure and Governance and issued as Financial Reporting Standards. Companies are required under the Companies Act to comply with Financial Reporting Standards. External auditors present findings and recommendations on the bank’s accounting systems, risk management and internal controls, asset quality, as well as noncompliance with any relevant laws, regulations, and rules. The MAS can require external auditors to submit additional information, enlarge the scope of an audit, carry out a specific examination. Every bank is required to publish its latest audited annual financial statements together with the external auditor’s report, and to file them with the Registry of Companies and Business.

Formal powers of supervisors (CP 22)

102. The Banking Act empowers the MAS to take actions against a bank if the bank is unable to meet its obligations or the MAS is of the opinion that the bank is carrying on its business in a manner likely to be detrimental to the interests of its depositors, creditors, or the public interest. The MAS may appoint a person to advise that bank in the proper conduct of its business or assume control of and carry on the business of that bank or direct some other person to assume control of and carry on the business of that bank. The MAS may also change or revoke any existing conditions of a license or impose conditions. A director, managing director, or manager of a bank in Singapore who fails to take all reasonable steps to secure compliance by a bank with the provisions of the Banking Act or any other written law applicable to banks in Singapore or to take all reasonable steps to secure the accuracy

and correctness of any statement submitted shall be guilty of an offense and shall be liable on conviction to a fine or imprisonment.

Cross-border banking (CPs 23–25)

103. The MAS supervises local banks on a consolidated basis including the operations of their overseas branches and subsidiaries. The MAS maintains various information sharing arrangements with host and home country supervisors. As home supervisor, it conducts on-site examinations of local banks' major overseas operations and holds annual bilateral meetings with the banking supervisors in these jurisdictions. The MAS applies the same risk-based supervision approach, examination standards and reporting requirements in supervising foreign bank branches as local banks. The Banking Act permits on-site examinations to be conducted by home supervisors and allows the MAS to share supervisory information with foreign home supervisors, provided that confidentiality is protected.

Recommended Action Plan to Improve Compliance of the Basel Core Principles

Reference Principle	Recommended Action
Independence and Adequate Resources (CP 1(2))	The multiple duties of the Chairman of the MAS should be re-assessed. While it might be appropriate for the Minister to determine national interest issues, including concentration or anticompetiveness, the role of the Minister in the merger application approval process should be clairified. The term "national interest" could be more clearly defined.
Large Exposure Limits (CP 9)	The definition of "closely related group" should be more comprehensive and include all companies under common control. Laws and regulations should be amended to provide that exposures explicity include all claims and transactions.

C. Authorities' Response

104. The MAS acknowledges that the current system where the Chairman holds multiple responsibilities may not be ideal and could be improved. Nevertheless, the MAS would like to reiterate that prudential licensing and supervision by the MAS has not been compromised. Besides legal and institutional safeguards, the long tradition of sound licensing and supervisory decisions and the increasingly transparent environment in which the MAS operates will continue to check against potential political interference.

105. The national interest issues that the Minister considers, apart from the MAS' prudential evaluation of merger or substantial shareholding applications, have been publicly defined and explained. Any deviation from these stated considerations would be open to questioning by the stakeholders in local banks (all of which are publicly listed companies), not to mention by the Parliament or Parliamentary Committee on Finance. Section 15C of the

Banking Act also stipulates that the Minister cannot set aside prudential considerations in approving applications to acquire substantial shareholdings in a locally incorporated bank.

106. The MAS requires banks to have systems and controls in place to aggregate and manage their exposures to a single group borrower, including the parent and subsidiary companies. Banks also report to the MAS off-balance sheet items such as currency and interest rate swaps and other derivatives. The MAS is reviewing the large exposures limit to address the issues raised.

II. IAIS Insurance Core Principles

A. General

107. Insurance supervision was assessed against the IAIS Insurance Core Principles and the Insurance Core Principles Methodology. The evaluation was based on the analysis of existing and proposed legislation (Insurance Act, MAS Notices, MAS Guidelines, etc.), discussions with the MAS, as well as with representatives from companies, industry associations, professions, and market analysts. All relevant information was made available as well as information on supervisory practices and detailed market data on sector performance and trends.

Institutional and macroprudential setting

108. In 2001, Singapore's domestic market had total insurance premiums of US$4 billion, which ranked it 34th in the world, 9th in the Asian region, and 2nd in South East Asia.[23] Premiums per capita at US$959 ranked 24th in the world and 5th in the region. Insurance penetration (gross premiums written/GDP) at 4.6 percent was below world and regional averages (7.8 percent and 7.6 percent, respectively). Life Insurance assets grew from 75 percent of the sector total in 1996 to 86 percent in 2002. The moderate size of the sector is reflected in the number of companies (see table below). In addition, there are 51 captive insurance companies which are supervised.[24]

[23] At the time of the assessment, figures for 2002 were not available for all countries.

[24] A captive is an insurance company that is totally owned by another organization and insures only, or mostly, the parent company's risks.

Numbers of Insurers and Reinsurers, at end-2002[25]

	Direct Insurers				Reinsurers			
	Locally Owned	Foreign Owned Locally Incorporated	Foreign Owned Branch	Total	Locally Owned	Foreign Owned Locally Incorporated	Foreign Owned Branch	Total
General insurance	8	17	18	43	5	4	17	26
Life insurance	2	3	1	6	0	0	1	1
Life and general	4	2	1	7	0	0	9	9
Total	14	22	20	56	5	4	27	36
Total excluding runoff	13	20	17	50	1	2	23	26

109. The life insurance offshore and reinsurance sectors are immaterial. For nonlife insurance, the offshore sector represented just under 20 percent for direct insurers and 80 percent for reinsurers in terms of assets.

General preconditions for effective insurance supervision

110. All preconditions for effective supervision are in place. The legal system incorporates well-established, accepted principles reinforced by high standards of professionalism and integrity. Participants report that the system is efficient, enabling creditors to secure interests without undue delay and cost. The Institute of Certified Public Accountants of Singapore, a member of the International Accounting Standards Board, ensures published financial statements comply with International Accounting Standards in all material aspects, and approves Singapore's SAS. The SAS also apply to insurers. Actuaries possess qualifications mainly from professional associations in the United Kingdom, North America, and Australia. A small pool of resident actuaries experienced in general insurance means that the head office actuaries for foreign branches and actuaries of consulting firms overseas supplement local resources. The Singapore Actuarial Society has a Code of Conduct and a Disciplinary Scheme and, in 2002, provisions on professional standards and guidance notes were introduced in the Society’s constitution.

B. Main findings

111. Insurance supervision shows a high degree of observance with the Core Principles. Major steps which are underway to further improve the supervisory system are noted below.

[25] Lloyds is separately approved under a Foreign Insurer Scheme, but is not included in the table.

Organization of an insurance supervisor

112. Responsibility for supervision lies with the MAS and, internally, mostly with the Insurance Supervision Department. The principal objectives are to exercise the powers and perform the functions under the Insurance Act, and foster a sound and progressive sector. The MAS Board appointments are made by the President of Singapore. Traditionally, the MAS Chairman has been the Minister-in-charge. The MAS is financially independent and sets its own budget. Legal protection is provided when discharging supervisory duties in good faith. The Insurance Supervision Department employs sufficient and highly qualified staff, uses external experts as needed, and provides salaries comparable to the private sector. Substantial changes to the regulatory framework are subject to extensive public consultation.

Licensing and changes in control

113. No person may carry on insurance business unless properly registered. Comprehensive licensing criteria address the areas identified in the Core Principle. Prior approval is required for an amendment of the memorandum and articles of association, reduction of paid-up capital, acquisition of 20 percent or more of voting rights in another company, mergers, establishment of new operations including subsidiaries, joint ventures and overseas branches, as well as the appointment of an underwriting or managing agent.

Corporate governance and internal controls

114. At present corporate governance rules only apply to listed insurers. Boards of life insurers are required to oversee their investment policy and asset risk management functions. Accounts have to be audited by an external auditor. The forthcoming Notice on Corporate Governance will address Board composition and responsibilities, appointments, surveillance of external and internal audit functions, accountability, risk management functions, and requirements for a Code of Conduct. The MAS is able to review the internal controls of an insurer and request strengthening where necessary. Proposed Guidelines on Sound Risk Management Practices highlight the key considerations of sound internal controls. The implementation and enforcement of the Corporate Governance notice and the Risk Management guidelines will significantly improve the framework.

Prudential rules

115. The insurance legislation contains comprehensive standards on investments which address diversification by type, limits on asset categories, asset admissibility, and single counterparty exposures. The MAS is empowered to make rules regarding financial instruments and accounting and valuation rules.

116. The law determines what has to be included in technical provisions for both life and general insurance and requirements for actuarial approval. The MAS sets standards for the calculation of technical provisions and requires provisions to be increased if necessary, assessing the adequacy of provisions through off-site monitoring and on-site inspections. Minimum requirements for the calculation of life technical provisions are set out in the law.

The interest assumption specified seems high given current economic circumstances.

117. Defined capital margin requirements reflect size and risk. When capital falls below the required amount, the MAS has the authority to intervene. Solvency requirements are not assessed on a group basis. For nonlife insurance, the business volume-related requirement is lower for reinsurers than for direct insurers. In the event of a windup, the law is generally clear except for the treatment of surpluses in one fund when another fund in the same company is in deficit. The implementation and enforcement of a risk-based capital framework that is expected to be introduced in 2004 will represent a significant improvement.

118. There are generally appropriate rules and regulations in place regarding reinsurers. Reinsurance business written by direct insurers is dealt with under the same rules as direct business. There are no provisions on exposure limits towards single reinsurers or reinsurance groups.

Market conduct

119. Key functionaries of insurers and brokers must possess the necessary knowledge, skills, and integrity. Insurers explicitly agree to treat customers fairly. On-site inspections of market conduct are regularly conducted. Relevant information requirements address disclosure to customers and information before giving advice or concluding a contract. Procedures to manage conflict-of-interest situations must be established. Brokers are directly licensed and supervised while agents are controlled via their principals. The MAS is in a position to stop those doing unauthorized business. As of 2003, the Ombudsman, who dealt with claim-related complaints, was replaced by the Insurance Dispute Resolution Organization with wider responsibilities to handle a variety of complaints.

Monitoring, inspection, and sanctions

120. Comprehensive powers exist to set the scope and frequency of reporting and to seek any other information deemed necessary. An adequate framework exists for monitoring insurers based on annual audited financial statements and annual and quarterly reports. Full-scale or limited on-site inspections in prudential and market conduct are undertaken. However, the MAS is limited in its power to perform on-site inspections in nonfinancial institutions to which insurers have outsourced functions. A wide range of powers of intervention and sanctions are available.

Cross-border operations, supervisory coordination and cooperation, and confidentiality

121. Insurance establishments of international insurers, insurance groups, and conglomerates are licensed and supervised. Subsidiaries, joint ventures of foreign companies, and foreign branches are subject to supervision of their solvency in Singapore. A license can be refused or additional conditions imposed where concerns that the parent is not subject to continuing effective home supervision exist.

122. Legal requirements for information exchange, assistance, and cooperation with foreign supervisors prescribe a range of preconditions, including reciprocity. The MAS can exchange confidential information and hold confidential information received with such an expectation. Comprehensive confidentiality requirements exist for officers.

Recommended Action Plan to Improve Observance of IAIS Insurance Core Principles

Reference Principle	Recommended Action
Corporate Governance and Internal Controls CPs 4–5	Ongoing reforms should be continued, in particular the Notice on Corporate Governance and the Guidelines on Sound Risk Management Practices.
Prudential Rules CPs 6–10	- Detailed rules on the use of outstanding premiums, agents' balances, outstanding investment income and other receivables as well as motor vehicles and computer equipment as assets to cover insurance liabilities and solvency margin requirements should be established. - General rules on assets in offshore insurance funds and Shareholders' Funds would be desirable, including on derivative use. - Minimum valuation rules for life insurance provisions should be reviewed. - More precise rules on the treatment of reinsurance recoveries for solvency purposes and counterparty risk would seem appropriate. - Solvency margin requirements should apply to both offshore insurance funds and Singapore insurance funds and be revisited to avoid regulatory arbitrage. - The allocation of any available solvency margin between funds in wind up situations should be clearly elaborated.
Market Conduct **CP 11**	The implementation of the Notice on Corporate Governance should be progressed regarding internal complaint procedures.
Monitoring, Inspection, and Sanctions **CPs 12–14**	The reporting of off balance sheet items might be improved. The MAS should be given the authority to perform on-site inspections in institutions to which companies have outsourced functions.

C. Authorities' Response

123. Notwithstanding the FSAP team's assessment that MAS shows a high degree of observance with IAIS Core Principles, MAS will continue to actively pursue ongoing reforms such as corporate governance notice and the Risk-Based Capital framework.

124. The proposed Risk-Based Capital framework involves the application of explicit risk charges on various asset classes and concentration limits in all funds. The generally accepted accounting principles (GAAP) in Singapore will continue to apply and provisions will need to be set aside based on GAAP. New valuation rules will require insurers to determine technical provisions using best estimate values for all expected future income and outgo, with an additional provision for adverse deviation. Reinsurance recoveries will be subject to credit

and concentration risk charges and insurers will be required to take into account of the probability of reinsurance recovery. The proposed framework will also address the issue of regulatory arbitrage.

125. While the MAS does not stipulate specific requirements to submit information on off-balance sheet activities (except derivatives) of insurers, the Statements of Accounting Standards in Singapore requires such information to be included in the insurer's annual financial accounts, a copy of which is extended to the MAS.

126. The MAS will embark on new initiatives to further enhance its effectiveness in insurance supervision. One example is reviewing the issue of extending on-site inspections to companies that have accepted functions outsourced by insurers, although functional outsourcing is currently not a common practice. Another initiative is to sign more Memorandums of Understanding with foreign supervisors to boost information exchange and cross-border cooperation.

III. IOSCO Objectives and Principles of Securities Regulation

A. General

127. This assessment of the level of implementation of the *IOSCO Objectives and Principles of Securities Regulation* (Principles) in Singapore pertains to both securities and derivatives products offered on the market. This assessment draws on: relevant laws and regulations; a self assessment by the MAS based on the self-assessment surveys designed by IOSCO; a self-assessment of achievement of the CPSS-IOSCO recommendations for securities settlement systems by the CDP; interviews with MAS staff and consultation with other sector and capital markets experts, including the staff of the SGX, the CDP, the Singapore Exchange Derivatives Clearing Ltd. (SGX-DC), the CPF, and several Government Linked Companies.

Institutional and macroprudential setting, market structure—overview

128. Singapore's securities markets are among the most well-developed and sophisticated in the world, but nonetheless the securities and fixed income sector, while growing, is smaller than the banking sector in terms of asset size. In 2002, the market capitalization of the SGX Mainboard and Sesdaq was 188 percent of GDP, which is among the highest in the world. The authorized securities and derivatives exchanges, which were demutualized and merged in 1999, and their respective clearing and settlement facilities are held through the SGX, which is a listed company. The futures market continues to operate as an open outcry as well as an electronic market. The MAS owns and operates an electronic interbank funds transfer system that is designed to achieve real time gross settlement. Securities and futures clearing currently occur through commercial settlement banks.

129. At end-2002, there were a total of 525 listed companies of which 385 were listed on the main board, 116 on the Sesdaq, 6 on Xtranet and 18 on CLOB International, with a total overall market capitalization of S$504 billion. Only a portion of the capitalization of the market can be characterized as free float. The (SGX-DT) trades financial and equity index contracts, and single stock futures. The SGX operates both trading and clearing linkage arrangements with the Chicago Mercantile Exchange, the Australian Stock Exchange, and the AMEX. Outstanding Singapore government debt securities increased to S$53 billion in 2002 and outstanding corporate debt rose to S$89 billion in 2002. Principal holders of debt securities are domestic. Singapore also has taken significant steps to build a bond market, including by recently offering a 15-year government benchmark security. The secondary market in debt securities is in its developmental stages.

130. Singapore recently has taken steps to develop a managed funds industry. At end-2002, a total of S$344 billion assets under management, with unit trusts totaling approximately S$14 billion. At the end of June 2002, S$11 billion of the CPF was invested in equities, 20 percent of which was invested indirectly through unit trusts.

131. Regulation and supervision of the securities markets, intermediaries, and collective investment schemes are entrusted to the MAS. The MAS is Singapore's central bank and unified financial sector regulator. It has the duty to foster a sound and progressive financial sector and is accountable for the prudential oversight of all credit institutions, the insurance industry, the trading of securities and futures, and the superovision of investment advisory and fund management activities. The MAS is empowered, but not obligated, to provide lender-of-last-resort facilities to a bank if it determines that such action is necessary to safeguard systemic stability.

General preconditions for effective securities regulation

132. Singapore has attempted to attract business to its markets by avoiding inappropriate barriers to entry. It does not impose controls on capital flows (although, it has size requirements with respect to domestic commitment of funds by offshore funds providers). Singapore also enforces the rule of law under a tested common law system. It consistently receives among the highest ratings for lack of corruption and has made appropriate public consultation part of its current efforts to liberalize and to improve the effectiveness of its regulatory system.

B. Main Findings

133. The framework for the oversight and regulation of securities markets, intermediaries, issuers, and collective investment schemes is well developed, and sophisticated.

134. **Regulator (Principles 1–5):** The MAS is legally and institutionally independent of the executive and legislative branches of the government and accountable to the public. The MAS' responsibilities with respect to securities regulation are clearly stated in the applicable legislation and rules in the SFA of 2001, the FAA, the Exchanges (Demutualization and

Merger) Act, and related regulations. The MAS has both prudential and conduct of business responsibility for those intermediaries for which Capital Markets Services Licenses are required. Because there are significant interrelationships between the government and statutory boards, greater disclosure of the MAS' operating procedures that guide implementation of policies would enhance accountability and transparency. Exercise of regulatory powers in securities is subject to the SFA. The MAS clearly has the staff, powers, expertise, and resources to conduct effective regulation. The consultation process with the industry and the public is in place and sound.

135. **Self-regulatory organization (Principles 6–7)**: The use of self-regulation in Singapore is in compliance with IOSCO principles. The SGX-ST and SGX-DT are recognized by statute as the front line regulator of trading activities on their markets. The MAS has enhanced its supervisory arrangements for oversight of the exchanges and clearing houses since the demutualization of the SGX. The MAS oversight includes testing the quality of the exchange front line program. The MAS cannot, however, review access denial determinations. The arrangements in place to avoid conflicts of interest between its regulatory and other functions could be more clearly specified

136. **Enforcement (Principles 8–10):** The MAS has comprehensive inspection, investigation, and surveillance powers. The MAS has a routine inspection cycle and is developing an enhanced inspection and oversight program for risk-based (prioritized and potential impact driven) supervision of intermediaries and markets. The MAS has regulatory and investigative powers to obtain data, information, documents, statements, and records; power to seek compliance with these regulatory, administrative and investigative authorities; power to impose administrative sanctions and/or to seek orders from courts; power to order the suspension of trading in securities or to take other appropriate actions with respect to oversight of the markets; and power to enter into enforceable settlements. Specifically, under new powers given by the SFA, the MAS may seek civil monetary penalties for fraud or misrepresentation with the consent of the Public Prosecutor. The MAS can also revoke, suspend or condition a license and make criminal referrals.

137. **Cooperation (Principles 11–13):** The law permits the MAS to share public information it has pertaining to regulated entities and non-public information subject to certain conditions set out in the SFA. The MAS may cooperate informally with regulators in other jurisdictions but prefers to do so by Memorandum of Understanding. The MAS is also a signatory of the Boca Raton Declaration, a multilateral Memorandum of Understanding, which calls for the sharing of large position information in certain commodity futures between regulators. Assistance is not limited by dual criminality although that may be taken into consideration. Consideration may also be given to whether or not the requesting authority would be willing to provide reciprocal assistance. The powers are in place to provide full, effective, and timely assistance to foreign securities regulators in exercising their surveillance and enforcement functions. The MAS is committed to enhancing cooperation with its regulatory counterparts.

138. **Issuers (Principles 14–16):** Initial public offerings and continuing disclosure requirements for issuers are in place, providing timely, adequate, and accurate disclosure of material information to investors. Prospectus disclosure requirements are state of the art. Issuers and their directors and underwriters are subject to criminal and civil liability if a prospectus contains false or misleading information or if material information is not disclosed. Company law and listing rules accord fair and equitable treatment to all shareholders. The Take-Over Code provides additional protections to all listed Singapore companies and to unlisted public companies with 50 or more shareholders and net tangible assets of S$5 million or more. Singapore generally follows international auditing standards. Quarterly financial reporting is also required for listed companies above S$75 million.

139. **Collective investment schemes (CIS) (Principles 17–20)**: There are requirements for the authorization of CIS and eligibility and regulation of their operators. All domestic CIS are in the form of unit trusts (although the law does not prohibit other legal forms). The MAS also recognizes foreign investment schemes subject to certain conditions. Provisions and powers of inspection are in place to ensure that the trustee exercises all due diligence in safeguarding the rights and interests of investors. Standards of disclosure and powers to review and to delay or to halt offers are similar to those for issuers of shares and debentures. The MAS should, however, require periodic reporting of asset value and assure itself that an operator has systems in place to ensure, and to oversee that calculations of net asset value are correct. The MAS should also clarify the known types of permitted offerings and make the requirements permitting to each more accessible. The MAS should also assure itself that it has sufficient means to identify potential violations.

140. **Market intermediaries (Principles 21–24)**: The MAS has adopted a single modular licensing framework for securities and futures market intermediaries. The SFA regulates intermediaries conducting regulated activities. The FAA regulates intermediaries providing financial advisory services. The MAS has adopted a risk-based approach to supervising its licensed intermediaries. Capital requirements for licensees will be largely based on the analysis underlying the Basel Core Principles. The new capital rule supersedes an adjusted net capital rule and is being phased in conservatively to test the potential impact on capital. Holders of Capital Markets Licenses must observe customer protection procedures.

141. **Secondary market (Principles 25–29):** Singapore has a sophisticated exchange and products structure. Under the SFA, trading systems for securities and futures products must be either approved as an exchange or recognized as a Recognized Trading Systems Provider. The MAS has a supervisory framework for the oversight of SGX. The SFA promotes transparency of trading by requiring an exchange's rules to provide for the proper recording and publication of trade data. The MAS and the SGX have advanced electronic and surveillance systems in place. SGX-ST and SGX-DT have mechanisms in place for the surveillance of and rules for handling and limiting large exposures and means of isolating the risk of a defaulting firm. There is substantial trading in the securities system that is within the settlement period, known as contra-trading. This trading could pose financial risks and should be kept under review.

142. **Clearing and settlement systems (Principle 30)**: Singapore has been rated fully in compliance with respect to the IOSCO principles for futures clearing and settlement systems. The clearing and settlement systems of the SGX are subject to regulatory oversight by the MAS, and are designed to ensure that they are fair, efficient and reduce systemic risk.

Recommended Plan of Actions to Improve Observance of the IOSCO Objectives and Principles of Securities Regulation

Reference Principle	Recommended Action
Principles Relating to the Regulator CP 1–5	Greater disclosure of the operating procedures that guide the implementation of securities regulatory policies would enhance accountability and transparency and counterbalance the inter-linkages between the regulators, the political structure and government linked corporations.
Principles of Self-Regulation CP 6–7	The MAS should keep exercise of exchange access denial and exercise of exchange supervision under careful review.
Principles for the Enforcement of Securities Regulation CP 8–10	Protocols for cooperation with the criminal authorities should be evaluated on a results basis in practice and refined if necessary.
Principles for Cooperation in Regulation CP 11–13	The MAS should continue to demonstrate a commitment to cooperate with its regulatory counterparts to the full and to keep under review how legal predicates to sharing operate in practice.
Principles for Collective Investment Schemes CP 17–20	The MAS should require periodic reporting of net asset value and assure itself that a CIS operator has systems in place to ensure that calculations of net asset value are correct. The MAS may wish to consider promoting other types of CIS vehicles than unit trusts.
Principles for Market Intermediaries CP 21–24	The MAS should evaluate the quality and quantity of risk capital produced by a new risk-based capital rule in practice. In particular, the MAS should assure, on an ongoing basis, that it develops sufficient expertise and appropriate techniques to use the more flexible and refined measures to take preventative action to address potential systemic risks and protection of customer funds.
Principles for the Secondary Market CP 25–30	The MAS should continue to monitor trading and to follow up on unusual activity to prevent misuse of error accounts or potential adverse consequences of contra trading and should assure that default rules and any guidance thereon are reasonably accessible to market users.

C. Authorities' Response

143. In general, the Singapore authorities agreed with the main findings and recommendations of this assessment. The MAS will be issuing requirements on the method and frequency of CIS valuation by end-2003. To provide guidance to the market, the MAS

has put up on its website a table on the different types of CIS which can be offered in Singapore and will be issuing a consumer handbook on their rights of recourse. The MAS believes that, although its inspection and enforcement programs have been very recently modified, the MAS had a credible program in the past and should not be faulted for improvements which while more flexible should be designed to better target abuse and to provide appropriate oversight and coverage. The MAS also notes that the current legislation allows for flexible formats or structures of domestic CIS to be set up. The MAS is committed to sound regulation and is currently and actively addressing the issues raised. It has aggressively pursued legislation necessary to meet or exceed international standards with respect to information sharing, accounting matters, and market abuse powers and procedures.

IV. Payments and Settlement Systems

A. CPSS Core Principles for Systemically Important Payment Systems

General

144. This section summarizes the degree of observance of the MEPS with the *Core Principles for Systemically Important Payment Systems* (CPSIPS) and includes recommendations for several further improvements. The assessment was conducted based on information provided by the MAS including a Self-Assessment of MEPS based on the CPSIPS, the MEPS Users Manual, the functional specifications of the system and an introduction to participating banks named, " Understanding of MEPS." Also, various legal documents were provided and consulted in the assessment, such as relevant sections of the law on the MAS Act, the new Payment and Settlement Systems (Finality and Netting) Act, the Banking Act, relevant articles of the insolvency regulations, and a legal opinion provided by the Attorney-General's Chambers of Singapore. These sources were supplemented by discussions held with officials of the MAS, the banking community, the Association of Banks in Singapore, and providers of retail payment systems.

Institutional setting

145. Singapore has a highly developed payment system for both retail payments and large value payments. MEPS is used for interbank payments transfers, the settlement of multilateral netting of checks and GIRO retail transfers, and the settlement of SGS on a delivery versus payment basis. It is unquestionably a systemically important payment system. The turnover in MEPS is around 95 percent of the total value of all electronic payment transactions and noncash payments in Singapore. The annual turnover in 2001 was more than 75 times gross domestic product and on an average day, electronic funds transfers of some S$40 billion are processed on a real time, gross settlement basis.

146. Each payment order sent through MEPS is settled in real time if the sending bank has enough balances in its account with the MAS. A settled payment is irrevocable and final under all circumstances, even in the case of a bankruptcy during that day. The funds received

can immediately be used without any risk by the beneficiary bank for its own payments obligations. Singapore is an international financial center, and for those reasons a large proportion of the members in MEPS are branches of foreign banks.

Main findings

147. No vulnerabilities in the system have been identified and it achieves the goal for which it was designed, namely the substantial reduction of systemic risks in the inter-bank payment mechanism. MEPS is a robust system and exhibits a high level of observance of the Core Principles. Work is under way to further improve the efficiency of the system. The MAS also fulfills the applicable central bank responsibilities and is well equipped and empowered to oversee the payment infrastructure.

148. **Legal foundation (CP I)**. The legal basis of MEPS is well-founded, being based on Section 29A of the MAS Act and on the Payment and Settlement Systems (Finality and Netting) Act. The latter legislation regulates the finality of payments in designated systems under all circumstances; MEPS is such a designated system. The MAS has established operational rules and regulations for the system that sets out clearly the functioning of the system and the responsibilities of the system provider and the participants. A commercial service agreement legally binds the participants to the operational rules. Accounting records produced by electronic means and electronic signatures have in Singapore the same evidentiary value in a legal dispute as documents in written form.

149. **Understanding and management of risks (CPs II–III)**. The rules and procedures reflect the fact that MEPS is a real-time gross-settlement system. Each settled transfer is final and irrevocable, and therefore eliminates the risk in obtaining bilateral gains from other financial institutions, using these for the fulfillment of the receiving bank's own obligations. Due to the relatively high minimum cash reserves that can be used during the day for payment purposes, liquidity in the system seems sufficient. The MAS monitors the liquidity flows in the system carefully during the operating hours, and if a gridlock might be imminent, additional liquidity is provided by the MAS via primary dealers. Banks can in real-time actively manage their waiting queues by setting and changing priorities of their respective payments in the queue. Information regarding the amount of each transfer that is not yet settled, but temporarily held in the sending bank's waiting queue, is also automatically provided to the receiving bank, a situation that facilitates intraday-liquidity management.

150. Discussions are taking place with the goal of upgrading the system in the near future and to build the so-called MEPS+. Under these plans an automatic intraday repo facility is foreseen, which will enable the banks to borrow funds from the MAS intraday to settle their payment obligations. There are at least two potential developments that could influence the MAS' decision in the provision of intraday liquidity: (i) the global trend towards lowering of binding reserve requirements; and (ii) the inclusion of the Singapore dollar into CLS, which may increase the time-sensitiveness of interbank payments.

151. **Settlement (CPs IV–VI)**. MEPS provides prompt and final settlement during the day if the sending bank has sufficient liquidity in its account. Any transfer that is not immediately settled is placed in a waiting queue until the bank concerned receives sufficient payments or fund itself in the (intraday) money market. MEPS settles in central bank money, thus participants are not exposed to settlement bank risks.

152. **Security and operational reliability and contingencies arrangements (CP VII)**. MEPS is highly reliable, and state of the art contingency measures are in place. Data integrity, authorization, authentication, nonrepudiation, and confidentiality are assured. A risk assessment is conducted once every three years and whenever there are significant changes in the system. Also, the Internal Audit Department performs EDP audits on a regular basis. In the MAS, an Audit Committee is installed that consist of three nonexecutive members of the board that focuses on reviewing the adequacy of the MAS' internal and external controls and the integrity of the financial reporting.

153. **Efficiency and practicality of the system (CP VIII)**. MEPS recovers most of its costs (all operational costs are covered and part of the capital costs), and offers an efficient set of functional facilities that promotes the smooth function of the system and enhances liquidity management by the participants. Straight through processing for participants is, however, hampered by the use of nonstandardized message types and the host front-end design of the system. Work is under way to link the system to the SWIFT network and to introduce standardized SWIFT message types.

154. **Criteria for participation (CP IX)**. Access is open to all banks active in Singapore, excluding Merchant Banks. Furthermore, the access criteria have been broadened recently so that regulated entities of systemic importance, such as the CDP Securities Settlement systems, can become members. The participation of CDP in the near future will make it possible to settle securities transactions done on the SGX-ST in central bank money. The criteria to suspend or terminate access are explicitly enumerated in the Service Agreement contracted bilaterally between the MAS and each participant.

155. **Governance of the payment system (CP X)**. MEPS is 100 percent owned by the MAS, which has built a conducive organizational structure around it to promote the effectiveness of its objectives and accountability. Internal and external auditors perform regular EDP-audits and an Audit Committee is charged with the adequacy of the MAS internal controls, the coverage and results of internal and external audits and the integrity of the financial reporting. Under the auspices of the Association of Banks in Singapore, a forum exists for gathering opinions and feedback from the participants on the operation of MEPS, and where plans for adaptations and improvement of MEPS are discussed between the MAS and users of the system. In this framework, a code of conduct between the participants codified in the by-laws of the Association of Banks in Singapore gives incentives to participants submitting portions of their share of the daily payments to be settled before certain points in time, which significantly promotes the throughput of payments in MEPS.

156. **Central Bank responsibilities in applying the CPSIPS**. The payment systems objectives of the MAS derive from the MAS Act that reads "fostering a sound and progressive financial service sector." The MAS has legal powers to oversee the retail payment systems provided by the Singapore Clearing House Association. However, work is under way to formalize and to broaden the legal scope of the oversight function and a new payment law will be drafted. In April 2003, a consultation paper was published in which the objectives and main policies of the MAS under the proposed oversight framework were outlined. Within the MAS, the oversight function is undertaken by the Specialist Risk Supervision Department that is not involved in the operations of MEPS. The MAS actively interacts with other central banks and is member of the G-10 Governors' Basel-based Committee on Payment and Settlement Systems (CPSS).

Recommended Action Plan to Improve Observance of the CPSS Core Principles for Systemically Important Payment Systems

Reference Principle	Recommended Action
Legal foundation *CP I–The system should have a well-founded legal basis under all relevant jurisdictions.*	*To reinforce the legal basis of all retail payment systems that clear on a multilateral basis and settle the outcome of this netting in MEPS by designating these systems under the Payment and Settlement System (Finality and Netting) Act..*
Understanding and management of risks *CPs II–III*	*To amend Singapore's law and to exempt explicitly collateralized loans in the form of repos from the registration under Article 131 of the Companies Act when an automatic intraday liquidity facility will be introduced in MEPS.*

Authorities' response

157. The MAS acknowledges the assessor's recommendations that there are areas that can be further enhanced.

158. The MAS considers the check and GIRO clearing systems to be of system-wide importance and intends to designate these systems under Payment Systems Oversight Act, which is expected to come into force in the first quarter of 2004. At a later stage, when the check and GIRO clearing systems have in place robust risk management arrangements such as loss sharing, the MAS will also consider designating them under the Finality and Netting Act in recognition of the multilateral netting arrangement.

159. With respect to the recommendation on repos, the MAS refers to its comments on the MEPS-SGS Assessment under the CPSS-IOSCO Recommendations for Securities Settlement System.

B. CPSS-IOSCO Recommendations for Securities Settlement Systems

General

160. This assessment of observance by Singapore of the CPSS-IOSCO Recommendations for Securities Settlement Systems (RSSS) reviews the degree of compliance of the two securities settlement systems in Singapore: MEPS-SGS which clears and settles SGS on a real-time gross settlement (RTGS) basis; and CDP that clears and settles corporate bonds and equities.

161. The assessment follows the CPSS-IOSCO Assessment methodology for RSSS that was published in November 2002. The assessment was conducted based on self-assessments by the MAS and the CDP of the observance of the RSSS with respect to the two systems, their relevant laws, rules, procedures, together with a legal opinion from the Attorney-General's Chambers of Singapore. These sources were supplemented by discussions held with officials of the MAS, the SGX, and the CDP as well as market participants.

Securities settlement systems infrastructure

162. Singapore has a developed clearing and settlement infrastructure for bonds and equities. There are separated markets for government securities on the one side and equities and private debt securities on the other. MEPS-SGS is wholly owned and operated by the MAS and facilitates the instantaneous and irrevocable transfer of SGS on a delivery versus payment basis. To achieve delivery versus payment, MEPS-SGS is linked to the MEPS. Only banks can participate directly in MEPS-SGS. The secondary market for SGS is concentrated around eleven primary dealers who provide liquidity to the market by quoting bid and offer prices under all market conditions.

163. Securities market activities for corporate bonds and equities are organized under two wholly owned subsidiaries of SGX—the SGX-ST and CDP. SGX-ST operates the market for the listing and trading of securities, while custody, clearing and settlement are undertaken by CDP. Investors can open directly a securities account in CDP (there are 1.1 million direct accountholders) but, if an investor wishes to do so, he can also opt for the use of a custodian. CDP performs two distinct functions: (a) CDP clears and settles all transaction done on SGX-ST; and (b) CDP offers settlement facilities for the over-the-counter market in private debt securities through its Debt Clearing and Settlement System. Trades are cleared and settled in a real time gross system on a delivery versus payment basis and in central bank money. For these purposes Debt Clearing and Settlement System is linked to MEPS.

Main findings: MEPS-SGS

164. MEPS-SGS eliminates principal risk by providing an adequate delivery versus payment mechanism. It also effectively reduces systemic risk and liquidity risk in the market for government securities by offering a RTGS facility. No major vulnerabilities in the system have been identified. The normal settlement cycle is no longer than two days. Work is underway to improve the efficiency by the implementation of a SWIFT-channel and the introduction of international standard message types and procedures. In addition, the liquidity on the cash side will be improved in the near future so that participants will be able to conduct an intraday repo with the MAS to acquire cash for the settlement of purchased securities or other payment obligations.

165. **Legal basis**. The legal basis for securities settlement is predominantly sound and the participants in the system as well as end investors are not exposed to custody risk. In line with international best practice, the MAS emphasizes the use of PSA/ISMA[26] Global Master Repurchase Agreement for repos. However, a further strengthening of the legal framework for repos and for collateralized loans and securities lending might modernize the SGS-market and boost Singapore as an international financial center.

166. **Clearing and settlement procedures.** In normal circumstances trade confirmation and matching takes place immediately after the trade is conducted. The settlement cycle is very short and, normally, settlement takes place on T+1. The system also supports same day settlement. For the time being, a proprietary network is used for communication and SWIFT look-a-like message types are used, but work is underway to support international standardized message types and to lead communication between the participant and the system provider via SWIFT.

167. **Settlement risk**. MEPS-SGS is a RTGS system that settles on a delivery versus payment basis (in Bank for International Settlement terminology: model 1, gross-gross). All government securities are dematerialized and transferred in book-entry form only. The MAS neither acts as a central counterparty, nor offers multilateral netting services. The RTGS design of the system effectively reduces settlement and liquidity risk and thus also systemic risk. MEPS-SGS is a reliable and robust system and the MAS has taken appropriate contingency measures. Data integrity authorization, non-repudiation and confidentiality are assured. Systems audits and risk-assessments are conducted on a regular basis.

168. **Regulation and oversight.** The MAS is organized in a way that is conducive to the prudent oversight of MEPS-SGS. There is a clear division of tasks between separate departments of the MAS with respect to the operation and oversight of payments and securities settlement systems. However, to further improve transparency, the FSAP team

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[26] PSA/ISMA: Public Securities Association/International Securities Market Association

recommends that the MAS publish an oversight framework document for securities settlement systems operating in Singapore and the MAS' approach to its administration.

Recommended Actions to Improve Observance of MEPS-SGS with the CPSS-IOSCO Recommendations for Securities Settlement Systems

Reference principle	Recommended action
Legal issues and custody risk	Study whether the legal framework for securities lending and borrowing should be strengthened, including to promote a sound legal basis for delivery versus payment by defining the legal immunity of securities blocked in MEPS-SGS and in CDP within the framework of a settlement procedure. Ensure that the framework provides the best possible basis for sound management of market risk and substitution of collateral and ensures that the legal risk of recharacterization as a collateralized loan is eliminated under all circumstances for at least standardized repo contracts.
Regulation and oversight	Publish a document on the oversight framework for securities settlement systems in Singapore and the MAS' approach to its administration.

Main findings: Central Depository Private Limited (CDP)

169. CDP has a robust system in place, which is compliant with international recommendations, for its main function—clearing and settlement of stock exchange transactions, which it can settle in a T+3 settlement cycle. To ensure timely settlement even in the event that the clearing members with the largest obligation on the cash side is not able to settle, CDP has at its disposal robust financial buffers in the form of a clearing fund and adequate liquidity arrangements. The system is operationally reliable with adequate contingency measures in place. However, there are vulnerabilities that need to be addressed, especially with respect to cases of failed deliveries of securities on the due date.

170. **Legal basis.** While the legal basis for securities settlement is predominantly sound, some minor improvements could be made. The protection of end-investors who make use of the services of a custodian or a depository agent might be uncertain. However, an amendment of the Companies Act to broaden the protection of clients against a default of its custodian is in preparation. The legal basis for delivery versus payment procedures could be improved by giving legal immunity to the blocking of securities during a settlement procedure. Finally, CDP should also evaluate the relevancy of the legal framework for other jurisdictions.

171. **Risk management.** Risk management is basically sound. CDP as central counter-party has sufficient means at its disposal to fulfill its obligations in the event that a clearing member with the largest position on the cash side is not able to settle. There are also liquidity arrangements to resolve smoothly any settlement problems. However, due to the lack of a procedure to check the availability of securities before the settlement of the cash leg takes place. This risk arises because CDP allows securities overdrafts—a practice, which is not in line with the international standards and could result in complex legal problems.

172. **Settlement risk.** CDP uses a full-fledged private bank, the United Overseas Bank, as settlement agent and for that is exposed to settlement or deposit risk. The FSAP team recommends that CDP open as soon as possible an account in MEPS and settle directly to the account of each clearing member. This change is already under way.

173. **Organizational arrangements.** Within this context, there may be a tension between the needs of CDP and those of its clearing members. In particular, it is not clear whether a good balance has been achieved between the rules and obligations imposed by CDP on its clearing members to manage CDP's own risks, and the needs of clearing members to manage their exposures to clients. It is recommended that clear objectives be defined with respect to the public objectives of CDP as a provider of an infrastructure for clearing and settlement.

174. **Regulation and oversight.** To further improve transparency, it is recommended that the MAS publish a document on the oversight of securities settlement systems operating in Singapore and the MAS' approach to its administration.

175. **Cross-border links.** CDP has established links with central securities depositories in the United States, Japan, and China in order to facilitate the trading of these securities in Singapore. Settlement in U.S. dollar is possible. The links are not used for cross border trades between residents of Singapore and abroad. In order to ensure that Singapore local laws are applicable and not U.S., Chinese, or Japanese laws to which Singapore residents might not be accustomed, it is recommended that the MAS study whether the conflict of law rules under private international law in Singapore should be changed.

Recommended Actions to Improve Observance of CDP with the CPSS-IOSCO Recommendations for Securities Settlement Systems

Reference principle	Recommended action
Legal issues and custody risk	Promote a sound legal basis for delivery versus payment by defining the legal immunity of blocked securities in CDP. Evaluate the relevancy of the legal framework in other jurisdictions in relation to CDP's operations.
Risk management	Eliminate the principal risk CDP is exposed to in case of short selling and do not permit securities overdrafts in these situations. As long as the clearing and settlement procedures are not adapted, the stress tests should take into account the potential principal risk.
Organizational arrangements	Define clearly the public interest of the clearing and settlement infrastructure and give more attention to this topic within the oversight framework for CDP. Study whether CDP fairly competes with Depository Agents with respect to the offering of custody services for inhabitants of Singapore and whether the system optimally services the risk management needs of clearing members.

Regulatory and oversight issues	Publish a document on the oversight framework for securities settlement systems in Singapore and the MAS' approach to its administration.
Cross-border links	Study the advances of the adaptation of conflict of law rules with respect to foreign securities held via a CDP account or through a global custodian based in Singapore.

Authorities' response

176. The authorities note that assessment has been thorough and provided positive assessments of the observance by MEPS-SGS and CDP with the CPSS-IOSCO recommendations. The authorities agree with the FSAP team's assessment that the MEPS-SGS and CDP systems are robust and reliable, with no major vulnerabilities. While some issues have been identified by the FSAP team as potential risks, the authorities note that these are risks that could be effectively managed and do not pose a material impact to the safety and soundness of the systems.

177. The authorities agree with the FSAP team that the legal basis for settlement is predominantly sound, and that minor improvements could be made to enhance the legal framework. The MAS, in cooperation with other government agencies in Singapore, is reviewing the Hague Convention on the law applicable to certain rights with respect to securities held with an intermediary.

178. On the recommendation for CDP to eliminate principal risk, the authorities note that CDP successfully settles more than 99 percent of trades on T+3 and has a robust risk management system to mitigate the principal risk that the small percentage of failed trade poses to the settlement system. The authorities have taken note of the risk management recommendations for improvements to further reduce the risk to the system and will discuss these with CDP.

179. The MAS has a transparent oversight framework for securities settlement systems. CDP is regulated under the SFA and the subsidiary legislation promulgated thereunder, while the proposed regulatory oversight objectives and policies for MEPS are set out in its Consultation Paper for the Payment Systems Oversight Act, published in April 2003. Within the MAS, the two departments responsible for the regulation of the MEPS-SGS and CDP collaborate and consult extensively on oversight of both systems, including through a formal management committee, the Payment and Settlement Steering Committee. On the recommendation to provide greater transparency, the authorities are agreeable to publishing its framework for oversight of securities settlement systems in Singapore.

V. Summary Assessment of Observance of IMF Code of Good Practices on Transparency in Monetary and Financial Policies

A. General

180. The transparency of the MAS' monetary and financial policies was assessed against the IMF's *Code of Good Practices on Transparency in Monetary and Financial Policies*. The assessment was based on several factors: (i) a self-assessment on monetary and financial policy transparency by the MAS; (ii) discussions with the Economic Policy Department and senior officials of the MAS; (iii) information available on the MAS website; (iv) relevant laws and regulations; and (v) discussions with market participants, including the SGX. The authorities fully cooperated with the assessment, and helped facilitate meetings with external groups.

B. Transparency of Monetary Policy at the MAS

Institutional and market structure—Overview

181. The MAS was established in 1971 by the MAS Act 1970, under which it is responsible for the formulation and implementation of monetary policy. The objective of monetary policy is specified in the legislation i.e., to promote, within the context of the general economic policy of the government, monetary stability and credit and exchange conditions conducive to the growth of the economy. As further clarified in MAS publications and the mission statement, in order to promote sustainable growth, the MAS seeks to maintain price stability. Monetary policy has been centered on the management of the exchange rate, under which the Singapore dollar is managed against a basket of currencies of Singapore's major trade partners and competitors. The trade-weighted exchange rate index (TWI) is allowed fluctuate within a target policy band which is not fully disclosed.

182. The MAS has had an enviable record of success in achieving its monetary policy objectives. Singapore has experienced a long period of low inflationary growth, while the financial sector has continued to be operated and supervised in a very prudent manner.

Main findings

183. The MAS has made significant steps in recent years towards increasing the transparency of the monetary policy framework in Singapore, and much of it is now quite transparent. Given the exchange rate regime-based monetary policy, however, the authorities remain cautious about the extent to which specific information about the monetary policy framework and policy operations should be made public. For example, neither the weights used in the TWI nor the precise limits of the band are disclosed. Information about the magnitude of MAS foreign exchange interventions is also not currently made available on a frequent or timely basis. Both of these factors make the accountability of the MAS less transparent.

184. The current Chairman of the MAS is concurrently the Deputy Prime Minister and the Minister for Finance. The multiple official responsibilities of the MAS Chairman could give rise to the potential for conflicts of interest which could also complicate the accountability framework. It should be stressed that this structure does not appear to have caused any problems to date. However, it could do so under different circumstances—for example, if fiscal and monetary policies came into conflict and/or the MAS Chairman was not such a senior Minister and thus less able to pursue the monetary policy objectives of the MAS so effectively. A move to a more conventional structure of separate responsibilities therefore should be seen as safeguarding Singapore's track record of good performance and the future integrity of the monetary and financial policy framework. It would also be seen as being consistent with the best practices in governance for financial institutions.

Principle Section 1: Clarity of roles, responsibilities, and objectives (monetary policy)

185. The MAS meets most of the elements of this principle. The roles and responsibilities of the MAS are specified in the MAS Act, which is a publicly available document. However, while the objective of monetary policy is defined in the legislation, it is done so in quite broad terms, and is open to more than one interpretation. Nor are there regulations that define the ultimate objective with clarity. This is perhaps not surprising given best practices at the time the Act was drafted. The MAS has made available additional information on its website, including speeches, a mission statement, the Annual Reports, and articles, which do give a narrower definition of the ultimate objective of monetary policy. These have helped the public better understand the policy objectives. Nevertheless, and while the historical performance of growth and inflation is indeed admirable, the ultimate objective of monetary policy could be more clearly stated in the legislation to prevent the potential confusion in the market.

Principle Section 2: Open process for formulating and reporting monetary policy decisions

186. The MAS observes many of the elements of this principle. At a very broad level, the framework, instruments, and targets for monetary policy are described, explained, and publicly disclosed by the MAS. The MAS manages the TWI within a target band to promote price stability as a sound basis for sustainable economic growth. The policy stance for the TWI is reviewed on a semi-annual basis to ensure that it is consistent with economic fundamentals and market conditions, thereby ensuring low inflation for sustained economic growth over the medium term.

187. The MAS publishes a semi-annual *Monetary Policy Statement*, which discusses its assessment of Singapore's economic and inflationary conditions and outlook, and makes an announcement on its monetary policy stance in terms of some of the key parameters of the band (slope and mid-point) for the period ahead. A *Macroeconomic Review*, which provides the basis and supporting research for the monetary policy decision, is released in conjunction with each *Monetary Policy Statements*. Significant progress has recently been made in publicly disclosing more information about the framework, instruments, and targets for monetary policy, in a range of publications which are readily available on the MAS website.

188. That being said, neither the precise limits of the band, its precise midpoint, nor the TWI currency weights are disclosed, which could create uncertainty regarding the implications of particular exchange rate movements. Similarly, the extent of MAS interventions in the foreign exchange market is not disclosed on a predetermined or timely schedule, somewhat weakening the accountability of the MAS for monetary policy implementation. The FSAP team felt that greater disclosure in these areas would enhance transparency and accountability without compromising the monetary policy regime.

Principle Section 3: Public availability of information on monetary policy

189. Singapore is an SDDS (IMF Special Data Dissemination Standard) subscriber, and the MAS discloses its balance sheet on a preannounced schedule and has a public information service that releases information, data and other publications with an advance release calendar. In addition to the information about the policy stance, the semi-annual Monetary Policy Statement also provides a chart of the TWI for the past 12–18 months. While there has been a clear move in recent years to providing an increasing amount of information on monetary policy to the public—for example, in the January 2003 monograph entitled *Monetary Policy Operations in Singapore*—the MAS does not release information on aggregate foreign exchange market interventions on an ongoing or timely basis.

Principle Section 4: Accountability and assurances of integrity by the central bank

190. The MAS' financial statements are released in the MAS Annual Report. These financial accounts are subject to external audit by the Auditor-General.

191. The Minister-in-charge of the MAS, who is the Chairman of the MAS, is accountable to the Parliament on the performance of the various functions of the MAS (e.g., monetary and regulatory functions). The Minister answers parliamentary questions relating to the objectives and conduct of monetary and financial policies and explains the MAS' policies in Parliament when tabling MAS-related Bills. The MAS also regularly reports to the public on the conduct of its monetary policy through the Monetary Policy Statements, and the Macroeconomic Review and the press and private analysts' briefings. The MAS also reports on regulatory developments in its Annual Report and press briefings.

192. The multiple official responsibilities of the Chairman could give rise to conflicts of interest which could complicate the accountability framework, for example if fiscal and monetary policies were in conflict. This does not appear to have caused any problems to date, especially if judged by the macroeconomic outcomes of recent years and the high regard in which the MAS is held by market participants. Nevertheless, as noted in the BCP assessment, to safeguard Singapore's track record of good performance and the future integrity of the monetary (and financial) policy framework, the FSAP mission recommends strengthening existing institutional safeguards and moving to a more conventional structure of separate responsibilities or alternatively some other structure which would incorporate recognition of the potential for conflicts and transparent measures to minimize them.

193. Standards for conduct of MAS officials/staff are laid out in the MAS' Operations and Procedures Manual which is based on the standards of integrity of the Singapore Civil Service. The standards of incorruptibility, meritocracy and impartiality of public servants are disclosed to the general public via provisions in the Penal Code of Singapore and by the Civil Service Corporate Statement released in 1995. This framework has aided Singapore in ensuring high levels of integrity and a lack of corruption in public agencies.

Recommended Plan of Actions to Improve Observance of IMF's MFP Transparency Code Practices—Monetary Policy

Reference Practice	Recommended Action
Principle Sections 1.1, 1.1.1, 1.1.5	Despite the significant improvement in transparency regarding the monetary policy implementation and operations in recent years, and the monetary policy framework, there is still some ambiguity about the relative importance attached to growth, price stability, and exchange rate stability. Greater clarity in the legislation would be required to be fully compliant with the transparency code. The legislation could in due course also be brought into line with the relatively more explicit description of the ultimate objective of monetary policy found in other MAS publications. The legislation could be updated to assist in accountability by, for example, having a clear specification of monetary policy objectives, a requirement for disclosure of performance against objectives, and how (and by whom) the performance of the MAS' board of directors might be monitored.
Principle Section 2.1	Given the exchange rate system and intervention policy, full disclosure is not necessarily appropriate, although it may be worth considering more disclosure about the instruments, perhaps beginning with disclosing the TWI weights, as a mechanism for providing more accountability of the MAS' performance.
Principle Section 2.4	A greater degree of *ex post* assessment of the performance of monetary policy, in the context of recent outcomes, would assist the public to form a judgment about the performance of the MAS, and boost the accountability function of the *Monetary Policy Statement* and Macroeconomic Review.
Principle Section 4.1	To safeguard Singapore's track record of good performance and the future integrity of the monetary (and financial) policy framework, the FSAP team recommends moving to a more conventional structure of separate responsibilities, or alternatively some other structure which would incorporate recognition of the potential for conflicts and transparent measures to minimize them.

Authorities' response

194. The MAS welcomes the FSAP team's endorsement of its generally high degree of policy transparency and intends to periodically review its approach in this regard to ensure that it supports and enhances the effectiveness of monetary policy. As recognized by the

assessors, the MAS has made important strides over the last couple of years in increasing and strengthening the communication of its monetary policy framework, operations and stance to ensure that the public has sufficient information to clearly understand and appreciate any changes in the monetary policy stance and operations. In particular, the semi-annual Monetary Policy Statement announces changes to the key parameters of the exchange rate policy band in the period ahead, and provides a chart on the TWI over the preceding one-year period. The accompanying Macroeconomic Review provides a detailed assessment of recent economic developments and outlook that underlies the monetary policy stance. The MAS also broadcasts the amounts and types of instruments used in its money market operations to the market on a daily basis. Comments and analyses by market participants on exchange rate policy have revealed a good understanding of the operating framework and policy stance, and most market participants have indicated that they are satisfied with the current level of disclosure.

195. Given the information provided on key monetary policy parameters and the historical data on the TWI, disclosure of TWI weights is not critical, as market participants have shown their ability to monitor and assess developments in the TWI. As for releasing data on foreign exchange interventions, this should only be done to the extent that it does not compromise the effectiveness of the MAS' implementation of monetary policy. The recent "Monetary Policy Operations in Singapore" monograph provides market participants with a clear understanding of Singapore's foreign exchange and money market operations. Nonetheless, the MAS will continue with its efforts to enhance transparency. For example, the MAS will henceforth be publishing a review of its money market operations in each October issue of the Macroeconomic Review. Such disclosure, along with the monthly publication of the MAS balance sheet and the daily publication of its money market transactions, provide market participants with sufficient information to understand and participate effectively in the foreign exchange and money market.

196. The MAS acknowledges that the current system where the Chairman holds multiple responsibilities may not be ideal and there is some ambiguity with regard to the objective of monetary policy in the legislation. The MAS is reviewing the MAS Act with a view to address this and other accountability issues. Nevertheless, the MAS would like to affirm that there are a number of safeguards already in place against any potential conflicts of interest that might arise. First, monetary policy decisions are deliberated within the formal decision-making structure of the Monetary and Investment Policy Meeting, where the decisions are made by consensus. Second, high standards of professionalism and integrity have been embedded in the value system of the public service. This, coupled with the increasingly transparent environment in which the MAS operate, provides an effective system of accountability that helps to minimize any potential conflicts of interest.

C. Transparency of Financial Policy at the MAS

Institutional and market structure—overview

197. The MAS is a consolidated supervisor. Under the MAS Act, the MAS is empowered to supervise all aspects of the financial sector in Singapore, including the payments and securities settlement systems, as well as to foster a sound and progressive financial services sector. The MAS' mission statement elaborates its financial policy objectives, stating one of those objectives as being: "to supervise the banking, insurance, securities and futures industries, and develop strategies in partnership with the private sector to promote Singapore as an international financial center."

198. In keeping with Singapore's role as a major international financial center, financial policies continue to evolve in line with best practice. The MAS has moved to a risk-based approach to regulation and oversight of financial institutions. The approach is already well established for banks, although they must be able to demonstrate that their internal management systems are risk-based and effectively implemented. Risk-based capital requirements were introduced for securities firms in 2002 and will come into effect for insurance companies in 2004.

Main findings

199. The financial policy framework is generally transparent, with most aspects being well specified in publicly available documents. Further, changes to the policy and supervisory frameworks are implemented only after a formal consultative process with market participants and the public. Nevertheless, greater public disclosure of a range of operational aspects of financial sector supervision would enhance the MAS' accountability in these areas.

200. In a few important areas, further progress could be made. Greater transparency with regard to the application of regulatory requirements and operating procedures would provide more certainty to the public and the markets about the consistency of the application of policies. The operating frameworks for oversight of payment and securities settlement systems should also be more clearly disclosed.

201. More information could also be made available in the MAS' regular publications about recent developments in the financial sector and the supervisory activities of the MAS, thereby strengthening the accountability framework. As has already been noted in the assessment of monetary policy transparency, the multiple official responsibilities of the MAS Chairman could give rise to conflicts of interest and thus could complicate the accountability framework.

Principle Section 5: Clarity of roles, responsibilities, and objectives (Financial Policies)

202. The MAS observes most of the elements of this principle. The MAS' financial policy objectives are publicly disclosed in broad terms in the MAS Act, its Annual report, on its

website and in various other publications. The MAS effectively disseminates new policies and policy updates to financial institutions, as well as the general public. The MAS also conducts surveys, seminars and issues publications periodically to promote greater awareness of settlement risks and other policies.

203. The MAS' oversight responsibilities regarding maintaining and overseeing the payment system could be more clearly spelled out. The FSAP team welcomes the authorities' intention to pass the new Payment System Oversight Act which will, among other things, achieve this. The oversight framework for securities settlement systems could also be more clearly set forth in publicly available documents. To date, there is no publicly available description of the approach that the MAS follows towards the ongoing oversight of securities settlement systems. Publishing such a framework document would also emphasize that the same requirements are applicable to systems operated by the MAS and those operated by outside parties.

204. The broad modalities of the MAS' accountability are also specified in the MAS Act, including procedures for appointment and removal of the Chairman, Deputy Chairman, Board of Directors and Managing Director. However, the Act is somewhat vague on a number of issues that would assist in accountability, such as the specification of objectives, a requirement for disclosure of performance against objectives, and how (and by whom) the performance of the MAS' Board of Directors might be monitored. Similarly, it is not entirely clear what the internal mechanisms are in place for insuring supervisory accountability. While it is recognized that key performance indicators to measure supervisory performance is an ideal that few supervisors have yet achieved, MAS has made some progress in this direction through the introduction of an External Perception Survey in 2002

Principle Section 6: Open process for formulating and reporting of financial policies

205. The MAS observes most of the elements of this principle. The MAS' recently formulated *Internal Guidelines on Consultation and Transparency in Financial Regulation* requires a formal process of public consultation and comment for substantive changes to the regulatory framework. Subsequently, significant changes in financial policies are announced and explained on the MAS website. The actual implementation of policies and the frameworks for doing so are not always so transparent, especially as regards securities settlement systems.

206. While a great deal of information on the financial sector is made publicly available, some improvements could be made. For example, information about the state of the banking sector and statutory compliance would help the public assess how the overall policy objectives were being pursued. This is particularly an issue in the area of banking supervision where publicly available information is not always to a level that sufficiently informs the reader to make a judgment on the MAS' performance. Especially when the MAS applies regulatory requirements to banks with some discretion in line with the risk-based supervisory framework, the regulatory practice is not fully transparent. Therefore, the FSAP team

recommends that steps be taken to provide more certainty about the degree of consistency of the application of regulations or individual treatment.

207. Although treaties with foreign financial agencies regarding information sharing and consultation in the areas of insurance and securities supervision are publicized, more information about the scope of such treaties would helpful in assessing whether there are any information gaps in the regulatory framework.

Principle Section 7: Public availability of information on financial policies

208. In recent years, the MAS has strengthened the reporting on its activities as a financial supervisor. The MAS announces major changes in financial policies through policy statements and/or speeches by senior MAS management, which are available on the MAS website and are also released to the media. On a routine basis, the MAS responds to requests from the public and media to clarify existing financial policies or proposed changes to legislation. The MAS Annual Report has information and data on the growth and performance of the financial sector.

209. There are, however, some gaps which could be addressed to further strengthen accountability. The MAS could, for example, provide more information about recent developments in the banking system in its regular publications. Similarly, in the securities area, more information could be made publicly available

Principle Section 8: Accountability and assurances of integrity by financial agencies

210. The MAS' financial statements are released in the MAS Annual Report. These financial accounts are subject to external audit by the Auditor-General.

211. The Minister-in-charge of the MAS, who is also the Chairman of the MAS, is accountable to the Parliament for the performance of the various functions of the MAS (e.g., monetary and regulatory functions). The Minister answers parliamentary questions relating to the objectives and conduct of monetary and financial policies and explains the MAS' policies in Parliament when tabling MAS-related Bills. The MAS also regularly reports to the public on the conduct of its monetary policy through the Monetary Policy Statements, the Macroeconomic Review press, and private analysts' press briefings. The MAS also reports about its regulatory developments during the Annual Report press briefings.

212. As noted in the assessment of monetary policy transparency, the Chairman's multiple official responsibilities could give rise to conflicts of interest which could affect the MAS' accountability. To safeguard Singapore's track record of good performance and the future integrity of the financial policy framework, the FSAP team recommends moving to a more conventional structure of separate responsibilities, or alternatively some other structure which would incorporate recognition of potential conflicts of interest and transparent measures to minimize them.

213. Standards for conduct of MAS officials/staff are laid out in the MAS' Operations and Procedures Manual which is based on the standards of integrity of the Singapore Civil Service. The standards of incorruptibility, meritocracy, and impartiality of public servants are disclosed to the general public via provisions in the Penal Code of Singapore and by the Civil Service Corporate Statement released in 1995. This framework has helped Singapore ensure high levels of integrity and a lack of corruption in public agencies.

Recommended Plan of Actions to Improve Observance of IMF's MFP Transparency Code Practices—Financial Policies

Reference Practice	Recommended Action
Principle Sections 5.1, 5.1.2, 5.3	The MAS Act could be amended to include more specific details on a number of issues that would assist in increased accountability, such as the specification of objectives, a requirement for disclosure of performance against objectives, and how the performance of the MAS' board of directors might be monitored. The MAS' responsibilities vis-à-vis the supervision of the payment system and the securities settlement systems should be more clearly specified. It is expected that the passage of a new payment system oversight act will remedy the problem as regards the payment system at least. The framework for oversight of the securities settlement systems should be made public in a single document.
Principle Sections 6.1.1, 6.3	Aspects of the detailed guidance to banking supervisors and operating procedures for insurance supervisors could be publicly disclosed. The MAS Annual Report and other publications would benefit from a deeper and more detailed discussion about developments, to strengthen the MAS' accountability.
Principle Sections 6.1.5	More information should be made public regarding the procedures for sharing information, particularly in the areas of insurance and securities market supervision, so as to enable the public to assess whether there are regulatory gaps.
Principle Section 8.1	See Principle Section 4.1 on transparency of monetary policy.

Authorities' response

214. The MAS notes the FSAP team's assessment that the MAS has made steady progress toward improving transparency in financial policies and has a high degree of compliance with the Transparency Code.

215. The MAS has, in recent years, developed a strong culture of transparency and made concerted efforts to have an open process in formulating and implementing financial policies. This transparency, together with the MAS' consistency in sound supervision, provides a high

degree of certainty and information to market participants of the MAS' thinking, conduct of its financial policies, and broad strategic directions. Nevertheless, the MAS agrees that it could publish more analysis on the financial system's health and more information on its implementation of risk-based supervision, where it assesses that these are useful to enhance its accountability.

216. The MAS acknowledges that the current system where the Chairman holds multiple responsibilities may not be ideal and could be improved. The MAS would be reviewing the MAS Act with a view to addressing this and other accountability issues. Nevertheless, the MAS would like to affirm the conclusion of the FSAP team that there are numerous safeguards against any potential conflicts that might arise. Besides legal and institutional safeguards, the long tradition of sound licensing and supervisory decisions and the increasingly transparent environment in which the MAS operates will continue to ensure that the MAS is able to carry out its responsibilities in an independent manner.

217. The MAS has already commenced drafting the document on the oversight framework for securities settlement systems and it is expected that the document will be published by the first quarter of 2004.

VI. Financial Action Task Force (FATF) Recommendations for Anti-Money Laundering and Combating the Financing of Terrorism

A. General

218. This Report on the Observance of Standards and Codes for the *FATF 40 Recommendations for Anti-Money Laundering* (AML) *and 8 Special Recommendations for Combating the Financing of Terrorism* (CFT) (FATF 40+8 Recommendations) was prepared by a team[27] of Fund staff, and an expert not under the supervision of Fund staff who assessed matters concerning AML/CFT law enforcement. The report summarizes the level of observance of the FATF 40+8 Recommendations and provides recommendations to enhance observance.

Information and methodology used for the assessment

219. This assessment is based on a review of Singapore's AML/CFT legislation and binding Notices issued by the MAS applicable to regulated institutions and the implementation of laws and regulations. The assessment team held discussions with senior officials from a number of government departments and agencies in Singapore as well as with representatives of industry. The assessment is based on the information available at the

[27] Portions of the assessment attributable to Mr. Paul Ryan (Australian Transaction Reports and Analysis Center), the independent AML expert.

time it was completed on August 8, 2003. Persons subject to the AML regime for preventative measures include banks, merchant banks, finance companies, life insurers, financial advisers, capital markets services licensees, approved collective investment scheme trustees, money changers and remittance agents.

B. Main Findings

Overview of measures to prevent money laundering (ML) and the financing of terrorism (FT)

220. Singapore has in place a sound and comprehensive legal, institutional, policy and supervisory framework for AML/CFT. The legal system is well regarded, with a low crime rate, an intolerance for corruption, and an efficient judiciary. *The known incidence of drug trafficking, corruption, and other serious crimes is comparatively low. White-collar crime is the most common money laundering typology.*

221. Singapore has taken systematic and effective steps to address many of the recommendations of the FATF mutual evaluation in 1998–1999. The Corruption, Drug Trafficking and other Serious Crimes Act criminalized money laundering for a range of serious offenses beyond drug trafficking, imposed a duty on all persons to make reports of suspicious transactions, and changed the criminal intent requirement for criminal ML offenses to a reasonable ground to believe standard. Singapore has in place a framework for the provision of mutual assistance through the enactment in 2000 of the Mutual Assistance in Criminal Matters Act (MACMA). Legally-binding Notices issued by the MAS imposed sector-specific requirements and guidance in the areas of customer due diligence, internal controls, audit, and training, among others. These legislative and regulatory changes as well as institutional efforts to improve feedback to institutions, enhance supervisory oversight, and improve training resulted in a significant strengthening of Singapore's framework.

222. Singapore's AML/CFT laws and associated regulations, as well as its institutional arrangements, provide a strong framework in terms of the FATF 40+8 Recommendations for the prevention and detection of ML/FT. There is a long established culture of compliance, and implementation measures are well monitored and generally effective.

223. Within the current strong framework, there remain areas requiring attention. There are limitations on Singapore's ability in practice to provide particular kinds of mutual legal assistance such as the provision of bank records, restraint of proceeds, and enforcement of confiscation orders. Customer identification measures for wire transfers need to be put in place by February 2005, as recommended by FATF Special Recommendation VII. The Palermo Convention has yet to be ratified. The authorities recognize that to comply with the revised FATF 40 Recommendations of June 2003, the current sector specific Notices should be updated during 2004. While providing valuable guidance, the principles-based Notices could be improved by making their provisions more detailed and direct, supplementing the current statements of principle with firm provisions and explicit guidance to assist financial

institutions in the practical implementation of effective AML/CFT measures. Work on amendments to the sector-specific Notices has already commenced.

Criminal Justice Measures and International Cooperation

224. **Criminalization of ML and FT**. Singapore criminalizes ML in a manner broadly consistent with international standards and imposes the requisite criminal and other sanctions. Singapore has adopted the list approach to predicate crimes, an approach recognized by FATF. Predicate offenses for ML include the crimes specified in the Vienna Convention, but not all those under the Palermo Convention. Singapore has signed Palermo, and is working toward its ratification. Ratification of the Palermo Convention should move forward quickly. The mission is of the view that an all serious crimes approach would be preferable. The offense of ML extends not only to those who have committed ML, but also to those persons who have committed both the laundering and the predicate offense. Offenses of ML and FT apply to persons, including legal entities, who knowingly engage in activities , and intent may be inferred from objective factual circumstances. Laws impose appropriate criminal sanctions for ML offenses, although fines for legal entities should be reviewed to ensure monetary sanctions are sufficient.

225. Singapore is a party to the FT Convention. For FT, Singapore has adopted measures to implement the U.N. resolutions, and criminalized FT on the basis of the FT Convention. FT offenses are not listed as predicate offenses to ML. As a technical matter Singapore has not adopted the approach set forth in Special Recommendation II of designating FT offenses as predicate crimes, although the underlying obligations contemplated by Special Recommendation II appear to be met. Instead, a provision of Terrorism (Suppression of Financing) Act (TSOFA) has been used to make laundering of terrorist funds a crime.

226. **Confiscation of proceeds.** Confiscation and provisional measures provisions are quite comprehensive. Except for terrorism financing, generally a conviction must be obtained in order for confiscation to occur. Adequate powers exist to restrain and freeze assets. Specific provisions addressing identification and tracing are needed. Laws generally provide for the protection of third party rights, but minor changes are recommended to ensure all necessary protections.

227. Measures to freeze funds of terrorists and those who finance terrorism are comprehensive. There are no legal impediments to asset sharing which would be considered on a case-by-case basis, but a treaty relationship may be needed. A formal mechanism for sharing confiscated property should be considered. Consideration should be given to extending beyond FT a forfeiture scheme based upon civil law. *Authorities maintain statistics on property frozen, seized and confiscated and training relating to confiscation and seizure is provided.*

228. **Financial Intelligence unit and processes for receiving, analyzing, and disseminating suspicious reports.** Singapore’s Financial Intelligence Unit, the Suspicious

Transactions Reporting Office (STRO), which is part of the police department, became operational in January 2000, and became an Egmont member in June 2002. STRO has wide powers to collect, analyze and disseminate information and all the functions appropriate to a Financial Intelligence Unit. The MAS has issued guidelines for identifying suspicious transactions, and STRO provides regular guidance in the form of typologies and other interactive assistance. Reporting procedures are mandated in MAS Notices.

229. STRO has full powers to gather additional documentation and access to a range of public and nonpublic databases. Administrative sanctions, including ultimately license revocation, are available for failure to comply with obligations through the MAS. STRO may share information with foreign authorities if a Memorandum of Understanding or other agreement is in place. The mission encourages the authorities to continue their efforts towards concluding further Memorandum of Understandings to supplement the two already in place. *Extensive statistics are kept regarding suspicious transaction reports received, analyzed and distributed.*

230. **Law enforcement and prosecution.** There are clear designations of responsibility for investigations into ML and FT with dedicated offices and personnel, and a police unit that works specifically on proceeds of crime issues. Investigative tools are available, although the legal footing for some, such as controlled delivery, has not been tested. Law enforcement officials have ready access to financial records through general police powers under the Criminal Procedure Code as well as special provisions under the Corruption, Drug Trafficking and other Serious Crimes Act and TSOFA.

231. Responsibility for the investigation and prosecution of ML and FT offences rests with Financial Investigation Division of Commercial Affairs Department of the Singapore Police Force and Attorney General's Chambers. There is good cooperation among these agencies. Singapore's size and the penalty sanctions under its laws provide clear deterrence.

232. **International cooperation.** Singapore has provided a framework for mutual legal assistance through MACMA but the lack of treaties or other relationships means that certain forms of assistance are not available to foreign authorities. Non-coercive measures (service of process and location of persons) and taking of evidence for foreign criminal proceedings are available, but assistance requiring coercion, for example, the provision of bank records, production orders, search and seizure, pre-trial restraints, proceeds identification and tracing, and enforcement of foreign confiscation orders, may be provided only to "prescribed" countries, currently limited to the U.S. for drug trafficking matters. Singapore has also signed a mutual legal assistance treaty with Hong Kong in June 2003, which will come into operation as soon as the Parties have ratified it.

233. While Singapore is working towards other treaty relationships, timeframes for completion and ratification are necessarily uncertain. Singapore could widen the possibilities for providing mutual legal assistance, for instance by making compulsory measures available absent a treaty, and by ratifying the Palermo Convention. MACMA also has a wide range of

mandatory and discretionary bases for refusing assistance which may limit the effectiveness of the Act in supporting international requests, and a narrowing thereof should be considered.

234. Because of the FT Convention, there are fewer restrictions for FT mutual legal assistance even in the absence of an MLAT. Singapore should "designate" FT Convention parties to ensure timely responses to mutual assistance requests are always possible.

235. Extradition for ML is possible to and from Malaysia, Hong Kong and 39 declared Commonwealth countries and territories. Singapore should act to make extradition possible with a wider range of countries. The FT Convention provides a basis for extradition for FT. Singapore however should re-consider the process whereby required notifications are planned only after a request is made posing possible *ex post facto* issues for requesting countries.

Preventive measures

236. Anonymous accounts are prohibited and basic principles of customer due diligence (CDD) are set out as requirements in MAS Notices. Work will commence shortly to update the Notices providing an opportunity to make CDD more explicit and provide even clearer guidance. Full originator information for wire transfers will be required within the FATF Special Recommendation VII timeframe. Record retention requirements exceed the five-year requirement. Internal policies to prevent ML are required but should extend to screening for employees and clarify intervals for internal training. suspicious transaction reports are required to be made promptly but financial institutions need reminding regarding reporting without delay. Tipping off is prohibited and should be extended to TSOFA reporting. Laws are comprehensive regarding integrity standards, provide for administrative sanctions and permit supervisor to supervisor cooperation

237. The MAS reviews financial institutions' compliance with AML/CFT requirements mainly through on-site inspections and internal and external audit reports. The MAS conducts full-scale inspections, in which coverage of AML/CFT measures is included. A series of themed inspections focusing on financing of terrorism was conducted post-9/11, and also included AML policies and procedures. The MAS is currently in transition to a risk-based supervision system. The MAS recognizes AML/CFT as an element of supervision which should be taken into account for institutions which might otherwise be categorized as low-risk from a prudential perspective. A review of MAS inspection findings (supported by discussions with a range of financial institutions) confirms the thorough nature of the MAS' inspection work, which includes sample testing of transactions and customer records, and visits to test compliance in retail branches. The MAS should review the frequency of its AML/CFT inspection work to ensure adequate coverage on an ongoing basis. There would be merit in an annual on-site visit to cover AML/CFT policies and practices for each institution with vulnerable business.

238. Discussions with industry representatives underscored the strong compliance culture with recognition of AML/CFT requirements, generally appropriate procedures in place, and

careful implementation. The banking industry has its own guidance which goes beyond the MAS Notice and is taken into account in inspections. The MAS expects supervised institutions to implement best practice, and a number of financial institutions interviewed had gone well beyond the requirements of MAS Notices and implemented many of the provisions of the Basel CDD paper and the Wolfsberg principles for private banking. The MAS has identified weaknesses in some institutions and has required them to take corrective measures. For example, documentation of AML/CFT policies and procedures was found in some cases to be lacking or out of date, and some weaknesses were identified in account opening procedures.

239. In general, the assessors found that there was a marked variation in financial institutions' detailed implementation practices, particularly in certain CDD issues such as politically exposed persons, accounts operated by intermediaries, and account opening (including for internet banking). This seems to be the result of differing interpretations of the general principles of the MAS Notices. While none of the instances noted would in themselves seriously undermine the overall effectiveness of implementation measures, the Notices should be enhanced through more specific and detailed implementation guidance to provide greater clarity in the requirements. .

C. Summary Assessment Against the FATF Recommendations

240. Singapore complies well with most of the assessable FATF 40+ 8 Recommendations. The main deficiency relates to the provision of mutual legal assistance. In addition, there is no current requirement regarding originator information on funds transfers that meets Special Recommendation VII standards although Singapore plans compliance with Special Recommendation VII within the time-frame set forth by FATF. Other areas requiring attention are highlighted in the following table. In addition, in areas in which Singapore has been assessed as meeting the appropriate standard, the assessors have included technical and general suggestions to further strengthen the framework which the authorities may wish to consider.

Recommended Action Plan to Improve Compliance with the FATF Recommendations

Reference FATF Recommendation	Recommended Action
40 Recommendations for AML	
Provisional measures and confiscation (FATF 7)	Adopt specific provisions addressing the tracing and identification of proceeds. For third party rights, have specific provisions addressing rights in pre-trial restraint period; for TSOFA ensure official notice of entry of forfeiture order so all affected persons have an opportunity to contest.

Reference FATF Recommendation	Recommended Action
Customer identification and record-keeping rules (FATF 10-13)	Make more explicit the Notices regarding conduct of transactions with those failing to provide complete documentation of identity. Make more explicit the duty to identify the persons authorized to operate accounts in the names of legal entities, and the requirements relating to the identification of beneficial owners. Review the requirements for dealings by financial institutions with professional intermediaries acting on behalf of clients, to ensure that the practice is fully in compliance with the international standard.
Increased diligence of financial institutions (FATF 14-19)	Remind financial institutions of obligation to submit suspicious transaction reports without delay; undertake further awareness training of financial institutions for this. Include in Notices requirement that financial institutions have adequate screening procedures to ensure high standards when hiring employees. Extend the tipping off prohibition to reports under TSOFA.
Other forms of cooperation – Basis &means of cooperation in confiscation, mutual assistance, and extradition (FATF 33-35)	Take steps to broaden the availability of compulsory measures including, for example, bank records, restraint orders and enforcement of confiscation orders. Consider narrowing the range of bases for refusal of assistance in MACMA that may limit the effectiveness of the Act in supporting international requests for mutual legal assistance. Take the steps necessary to make extradition for ML possible with a wider range of countries.
8 Special recommendations on terrorist financing	
V. International Cooperation	Issue notifications in the Gazette under the Extradition Act, applying the Act as if it were a treaty to countries that are a party to the FT Convention. For mutual legal assistance, take steps necessary to ensure assistance will be available on an immediate basis.
VII. Wire transfers	Pending full implementation of Special Recommendation VII requirements, undertake further efforts to ensure financial institutions are fully aware of a specific obligation of enhanced due diligence on wire transfers, particularly with regard to incomplete originator information. At least within the time frame set forth under Special Recommendation VII, impose requirement regarding the inclusion of complete originator information when transmitting funds.

Other Recommended Actions

Reference	Recommended Action
Criminalization	Ratify the Palermo Convention on an expedited basis. While the revised FATF 40 Recommendations recognizes the list approach, the authorities could reassess whether this is the most effective choice for Singapore. At a minimum ensure all offenses with a maximum penalty of four years or more become predicate offenses to money laundering.
Confiscation/Seizure	Continue with the review of current confiscation/forfeiture scheme in light of developments in other countries as well as local case law, including consideration of confiscation without conviction for additional general offenses. Consider formal mechanism for the sharing of confiscated property.
Law enforcement	*Make available additional and specific funding to enable relevant authorities to investigate and prosecute terrorist and FT activity.*
Customer Identification	Amend notices to make more explicit the CDD obligations of financial institutions, and in particular those set forth specifically in the revised FATF 40 Recommendations. Revise, as appropriate, mandatory and recommendatory elements of Notices to ensure clear guidance is provided, that recommendations do not undercut mandatory obligations and that FIs are provided a clear understanding of their obligations.
Suspicious Transaction Reporting	Enhance the current provision that protects those who make reports relating to FT.
Internal Controls	As CFT is incorporated more fully into laws and procedures, have Notices address internal controls, training and audit as they relate to FT. Regarding Notice provision on the requirement for renewed training, afford “regular intervals” more specificity. Given pace of development of internal AML/CFT standards, an annual cycle for refresher training may be warranted. Consideration could be given by financial institutions to requiring their employees and agents, as appropriate, to sign an annual certificate confirming receipt and understanding of training received and acknowledging their personal legal obligations in implementing AML/CFT measures.

D. Authorities’ Response

241. The Singapore authorities welcome the positive assessment that Singapore’s laws, regulations and institutional arrangements provide a strong legal, institutional, policy and supervisory framework in terms of the FATF 40+8 Recommendations for the prevention and detection of ML/FT. Many of the suggestions for further improvements will be implemented as Singapore continues to strengthen its AML/CFT framework to comply with the revised FATF 40 Recommendations of June 2003.

242. In international cooperation, the authorities note the assessment that Singapore has provided for mutual legal assistance through its legal framework, and that more treaty relations on such assistance should be established. Within the constraints of our

counterparties' priorities, we will continue to expedite current negotiations. Singapore's law enforcement and supervisory authorities enjoy good working relationships and cooperate closely with their foreign counterparts on a regular basis, and this has worked well to provide the necessary cooperation.

243. The assessors acknowledge that Singapore financial institutions have a strong compliance culture with recognition of AML/CFT requirements, generally appropriate procedures in place, and careful implementation. The authorities believe that this is evidence of the effectiveness of their general policy of issuing principles-based notices to the financial institutions, supplemented by thorough inspections and follow-up. The authorities also note the assessors' recommendations for further improvement and will consider the recommendations on preventative measures, including those calling for more explicit rules on customer identification and record-keeping, in the context of risk and cost-benefit considerations.

244. To further improve the reporting of suspicious transactions, STRO is currently working on a computer system that allows online suspicious transaction reports submission and dissemination of AML/CFT educational material. In time, all financial institutions and other professions would be encouraged to participate in this system.

245. Singapore will continue to review and update the current overall scheme for confiscation and seizure in light of recent developments in other countries, as well as local case law in order to improve our ability to confiscate and seize proceeds of crime.

246. The authorities note that the revised FATF 40 Recommendations recognizes the list approach to designating predicate offences. Singapore will assess the recommended action to re-consider our list approach in light of the revised FATF 40. Singapore played an active role in the negotiations that led to the Palermo Convention, has signed the Convention, and will consider ratifying it as soon as possible.

247. The MAS is currently in consultation with the financial institutions on cost-effective and efficient implementation of Special Recommendation VII. Financial Institutions will be required to obtain full originator information within the timeframe set out in Special Recommendation VII. As the Notices are amended, the authorities will also advise financial institutions that the current AML measures of internal controls, training and audit are equally applicable to the combating of terrorism financing, as is already the case in practice. The Notices require financial institutions to provide refresher training at regular intervals to ensure that staff are reminded of their responsibilities and are kept informed of new developments.

INTERNATIONAL MONETARY FUND

SINGAPORE

Financial System Stability Assessment

Supplementary Information

Prepared by the Monetary and Financial Systems and Asia and Pacific Departments

Approved by Stefan Ingves and David Burton

March 10, 2004

1. **This supplement presents the 2003 financial results of Singapore's three local banks that became available since the issuance of the Financial System Stability Assessment report.** The results indicate that the local banks' financial positions further improved in the final quarter of 2003 as the economic recovery gained momentum (Table 1). This supports the conclusions of the report regarding the prudential standing and resilience of Singapore's banking sector.

2. **Notwithstanding the stresses imposed by the SARS outbreak, all local banks made profits and remained well capitalized by international standards in 2003.** The local banks' combined profits increased strongly owing to a significant increase in non-interest income, continued operating cost containment, and a substantial reduction of provisions associated with further improvements in loan quality. The larger non-interest income reflected higher earnings from commissions, wealth management, investment banking, and trading activities. Profits from the divestiture of non-core businesses also helped to increase non-interest income, but their share in total earnings remained small. The local banks' weighted average capital adequacy ratio rose to about 18 percent as banks reduced their risk weighted assets and one bank raised a substantial amount of tier II capital.

3. **In 2003, local banks continued to earn more than 30 percent of their before-tax profits from foreign operations, particularly in Hong Kong SAR and Malaysia.** Local banks' total profits in Hong Kong SAR fell only slightly despite the impact of the SARS outbreak, mainly owing to strong gains in the second half of 2003 aided by the rebound in world capital markets. Profits from Malaysia grew strongly in 2003, reflecting improvements in loan portfolio quality with commensurate reductions in provisions.

Table 1. Singapore: Local Banks, 1998–2003

(In percent, unless otherwise specified)

	1998	1999	2000	2001	2002	2003 1st 3Q	2003
Capital adequacy 1/							
Regulatory capital to risk-weighted assets	18.1	20.6	19.6	18.1	16.9	17.8	17.9
Regulatory tier I capital to risk-weighted assets	16.0	17.4	16.4	11.6	11.3	11.6	11.8
Shareholders' equity to assets	10.0	11.0	10.0	10.0	11.0	11.0	11.0
Asset quality 1/ 2/							
Classified loans to total loans	7.8	8.5	5.6	5.7	5.5	5.3	5.1
Nonperforming loans (NPLs) to total loans	...	5.3	3.4	3.6	3.4	3.5	3.2
Classified loans net of specific provisions to regulatory capital	28.7	26.4	23.5	25.1	25.0	20.3	18.8
NPLs net of specific provisions to regulatory capital	...	11.3	10.7	11.4	10.7	9.7	7.5
Total provisions to classified loans	51.1	53.8	53.8	56.9	60.2	64.3	66.6
Total provisions to NPLs	...	86.2	87.2	90.1	96.7	96.6	107.8
Specific provisions to classified loans	28.8	34.2	29.5	32.6	33.8	35.7	36.6
Specific provisions to NPLs	...	54.7	47.9	51.5	54.3	53.6	59.3
Loan concentrations (in percent of total loans)							
Bank loans	28.1	31.2	35.4	30.0	29.3	25.7	24.3
Non-bank loans	71.9	68.8	64.6	70.0	70.7	74.3	75.7
Of which:							
Manufacturing loans	9.2	8.8	9.1	8.2	8.4	8.9	8.6
Building and construction loans	17.2	16.6	16.3	15.5	14.1	13.0	12.3
Housing loans	18.2	21.3	22.3	26.0	27.5	28.3	28.9
Loans to professionals and private individuals	12.6	13.1	13.8	13.5	14.1	14.0	13.9
Loans to nonbank financial institutions	15.4	14.0	14.7	13.1	13.4	13.5	13.7
Profitability 1/							
After-tax profit growth	-37.7	183.6	22.2	-32.1	1.4	...	15.8
After-tax return on assets 3/	0.4	1.2	1.3	0.8	0.8	0.8	0.9
After-tax return on equity 3/	4.2	10.7	12.6	7.7	7.6	7.8	8.3
Net interest margin	2.3	2.2	2.2	2.0	2.1	2.0	2.0
Non-interest income to total income	26.8	31.8	29.3	36.4	32.4	37.9	38.4
Non-interest expenses to total income	33.5	33.3	39.6	43.6	40.3	39.5	39.7
Memorandum items:							
Total before-tax profits (in millions of Singapore dollars)	...	...	3,624	3,207	3,506	...	3,874
Total before-tax profits from foreign operations	...	...	-8	765	1,142	...	1,203
Of which:							
Hong Kong SAR	...	...	196	525	641	...	631
Malaysia	...	...	252	200	330	...	411
Total before-tax profits from foreign operations/ total before-tax profits	...	...	-0.2	23.9	32.6	...	31.1

Sources: Monetary Authority of Singapore; and banks' accounts.

1/ Represents weighted average of three local banking groups and includes operations of foreign branches and subsidiaries.

2/ Classified loans include current loans that exhibit definable weaknesses that may jeopardize repayment, in addition to NPLs that are overdue more than 90 days (comprising loss loans—including fully provisioned loss loans not written off—as well as substandard and doubtful loans).

3/ For the first three quarters of 2003, the figure is estimated based on annualized profits and assets at end-September 2003.