
MAS' FRAMEWORK FOR IMPACT AND RISK ASSESSMENT OF FINANCIAL INSTITUTIONS

Impact Assessment

CRAFT Risk Assessment

Monetary Authority of Singapore
April 2007



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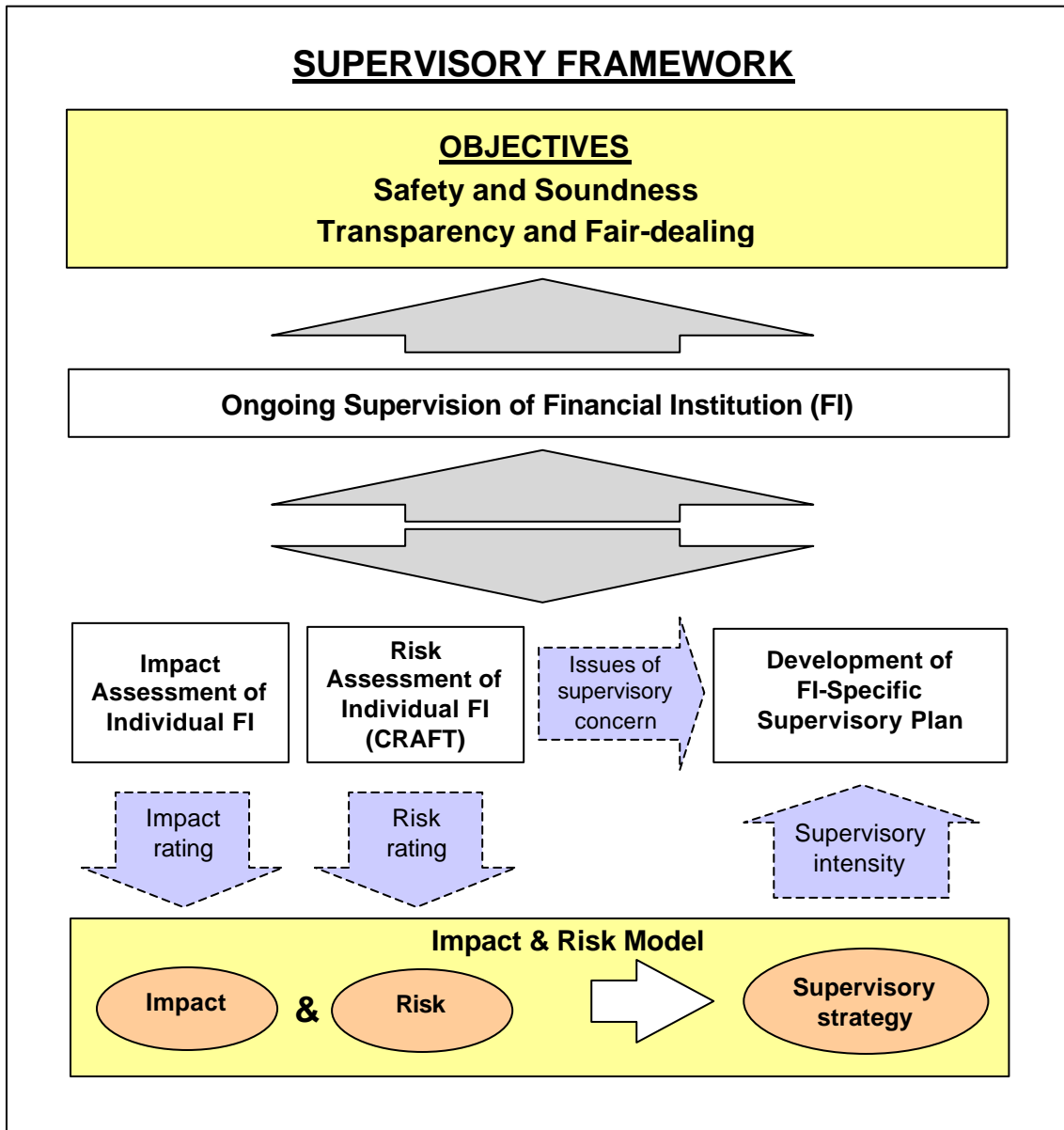
1 Introduction

- 1.1 The Monetary Authority of Singapore (MAS) is the integrated supervisor of the financial services sector. The objectives of MAS' supervision, the functions we perform, and the principles that guide our approach are spelled out in "Objectives and Principles of Financial Supervision in Singapore", issued in April 2004.
- 1.2 This document gives more detailed information on one of MAS' key functions – the risk-based supervision of financial institutions. It covers how MAS' supervisory objectives and principles shape our supervisory framework, and the supervisory processes that underpin the framework including how MAS assesses the impact of financial institutions and the use of the **Common Risk Assessment Framework and Techniques (CRAFT)** to assess their risks. MAS' supervisory work to address themes that affect the industry as a whole and issues that cut across different financial service sectors is not, however, covered in this document.
- 1.3 The risk-based supervision of financial institutions is inter-related with the other oversight functions that MAS performs to achieve its supervisory objectives. These include authorising financial institutions to offer financial services, setting regulatory rules and standards, and taking actions against institutions and individuals for regulatory breaches. MAS also undertakes surveillance of the financial system to identify emerging trends and potential vulnerabilities in order to guide and support its regulatory activities. All these activities are integral to the achievement of MAS' supervisory objectives.
- 1.4 We seek through this document to provide greater clarity on the desired outcomes of MAS' supervision of financial institutions and to promote the industry's understanding of how MAS' supervisory activities help achieve these outcomes. The supervisory framework and the processes described herein apply to licensed banks and merchant banks, finance companies, insurance companies and brokers, capital market intermediaries, and financial advisers.

- 1.5 The document should be of particular interest to the key stakeholders that MAS works with, principally the boards and senior management of financial institutions. This is because:
- the supervisory assessment of an institution's impact and risk will determine MAS' supervisory strategy towards that institution and the supervisory activities in which MAS engages;
 - MAS expects an institution's board and senior management, with whom the primary responsibility for risk oversight lies, to address any issues of supervisory concern that are identified in the course of our supervision; and
 - how well institutions manage their risks will determine the intensity of MAS' supervisory attention and whether supervisory requirements need to be imposed.
- 1.6 This document goes on to describe the structure of the Supervisory Framework (paragraphs 2.1 to 2.13), the features of the Impact and Risk Model (paragraphs 3.1 to 3.12), the key components of the processes used in the Supervisory Framework (paragraphs 4.1 to 4.34), and how supervision is conducted in practice (paragraphs 4.35 to 4.44).

2 Overview of the Supervisory Framework

- 2.1 The aim of MAS' risk-based supervision is to foster the safety and soundness of financial institutions and to promote transparency and fair-dealing by financial institutions in relation to their customers and counterparties. These two supervisory objectives contribute towards MAS' overarching objective of a stable financial system. We are concerned about any risks that prejudice the achievement of these objectives.



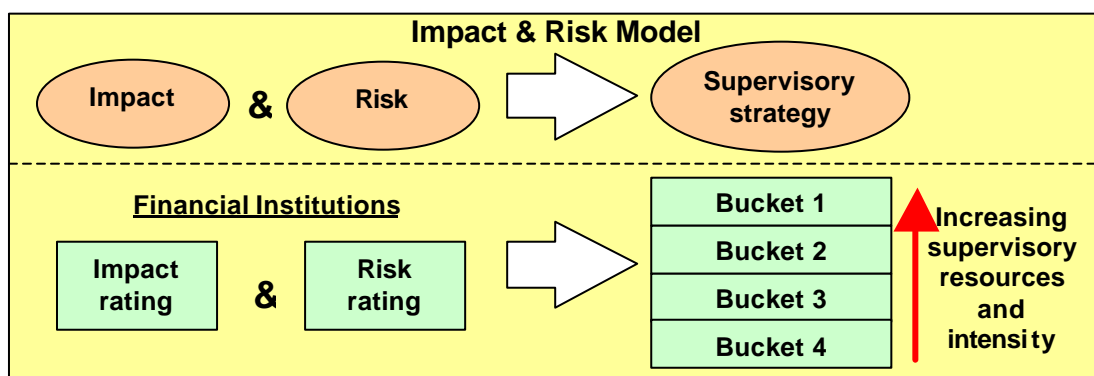
- 2.2 The ongoing supervision of a financial institution seeks, therefore, to identify and address potential risks that may affect the safety and soundness of the institution, or the transparency and fair-dealing of its market conduct practices. This means that MAS is concerned with institution behaviour that affects both its overall financial condition and its interaction with individual customers and counterparties.

- 2.3 In seeking to meet the two broad supervisory objectives mentioned in paragraph 2.1 above, MAS does not aim to prevent all failures. A ‘zero failure’ regime would place an excessive regulatory burden on financial institutions and could impair the efficiency of the financial system. Instead, we aim to reduce the risk of failure of institutions or of inappropriate behaviour through increased supervision where it is both appropriate and likely to be effective.
- 2.4 This approach is articulated through the impact and risk model, which is at the heart of the framework. Within each financial services sector, we first evaluate and rate the impact and risk of an institution relative to other institutions. We use a risk assessment system, CRAFT, to evaluate the risk of an institution. We then combine the assessments of both impact and risk ratings and distinguish those institutions that may pose a higher threat to the achievement of our supervisory objectives. Finally, we determine the appropriate supervisory strategies and, in turn, the level of supervisory intensity required.
- 2.5 A supervisory plan designed to address issues of supervisory concern identified through the risk assessment of the institution is then prepared. The plan guides the supervisory activities undertaken during the ongoing supervision of the institution and takes into account the given level of supervisory intensity. It is updated at regular intervals with new information obtained from on-going supervisory activities.
- 2.6 The different components of the risk-based supervisory framework are not in practice discrete or rigid sequential steps, but operate in a dynamic and interrelated manner.
- 2.7 As well as being risk-focused, MAS’ approach to supervision also relies on the board and senior management of each institution. The board and senior management play the central role in maintaining adequate risk oversight of the institution’s business activities. They are responsible for implementing processes and controls to measure and manage the institution’s risks, for ensuring its compliance with regulatory requirements, and for its dealing with customers and counterparties in a transparent and fair manner.
- 2.8 Risk decisions need to be taken and overseen at appropriate levels by people with adequate and relevant expertise and incentives. An environment of sensitivity to risk and sound risk management is to be cultivated through the value system of the institution and in the way that people are recognised and remunerated. Of equal importance, an institution needs to embrace a culture of dealing fairly with customers and counterparties in the conduct of its business.

- 2.9 MAS seeks to reinforce the responsibilities of the board and senior management for the oversight and governance of the institution's activities and to support the efforts of the institution to improve its risk management and internal processes in order to protect the interests of its customers and counterparties, as well as its shareholders. As long as risks are adequately managed, we seek to minimise the need to interfere with institutions' business operations.
- 2.10 MAS performs its supervisory responsibilities by checking on the quality of corporate governance, internal controls and risk management of the institution and the institution's dealings with its customers and counterparties, with the aim of encouraging a system of sound management practices commensurate with the institution's type, scale and complexity of business activities, and their related risks.
- 2.11 A risk-based framework entails MAS making informed choices about supervisory priorities, using the best and most pertinent information available. The framework must be continually refined to stay relevant and robust. It must be implemented well and in a consistent manner, and supported by supervisory staff with the requisite knowledge, experience and skills.
- 2.12 To maintain a high degree of confidence in the quality of its supervision, MAS puts considerable resources into training its supervisory and surveillance staff and in developing the breadth and depth of the expertise and experience of its risk and product specialists.
- 2.13 MAS has in place measures to assure that our supervisory activities are proportionate to the institution's potential to affect the achievement of MAS' supervisory objectives and carried out in a consistent manner. They include:
- comprehensive operating procedures to guide supervisory staff in key supervisory processes;
 - a system of challenge and review by experienced supervisors or panels of senior and specialist staff for key supervisory assessments of individual financial institutions;
 - decision making on major regulatory or supervisory issues at senior management forums; and
 - regular checks on the supervisory processes by MAS' internal audit function.

3 Impact & Risk Model

- 3.1 The financial institutions operating in Singapore form a large and diverse group. The supervisory framework uses a model to provide a systematic and consistent approach to help determine MAS' supervisory priorities, and to distinguish between individual institutions within each financial services sector - banking, insurance, and capital markets - so that the degree and nature of supervisory attention is varied and calibrated appropriately.



- 3.2 The model considers the impact of a financial institution within each financial services sector (i.e. relative systemic importance) and its risk (i.e. relative risk profile). These two critical inputs ensure that the intensity of MAS' supervision is proportionate to the institution's bearing on the achievement of MAS' supervisory objectives.
- 3.3 Using the model, the impact rating within the relevant financial services sector and the risk rating of each institution are combined to assign the institution to one of four categories of supervisory significance. For institutions of the same risk, those having higher impact would generally be in a higher bucket. Similarly, where institutions have the same impact, those of a higher risk would generally be in a higher bucket. We call these separate categories "supervisory buckets" numbered 1 to 4, where bucket 1 contains institutions that have the greatest potential to affect the achievement of MAS' supervisory objectives.
- 3.4 In assigning the supervisory buckets, the impact rating is accorded more importance relative to the risk rating. So between a high-impact, low-risk institution and low-impact, high-risk institution, the model generally assigns the former to a higher supervisory bucket, given the likely greater overall consequences should things go wrong at the high-impact institution.

- 3.5 High-level supervisory strategies that influence the ongoing supervision of institutions have been developed for each supervisory bucket. These strategies consider the share of MAS' supervisory resources that are to be allocated to each bucket, given the impact and risk of the institutions therein, and provide guidance on how these limited resources could be used most effectively.

Intensity of supervision

- 3.6 The intensity of supervision varies for different buckets of institutions. The variation is mainly in terms of the frequency of on-site inspections and the nature of the supervisory oversight of each financial institution.
- 3.7 All financial institutions are subject to standard, base-level monitoring. In addition to routine supervisory activities, such as the processing of regulatory applications, this includes monitoring key indicators and the development of the institution's business, reviewing regulatory returns and audit reports, as well as taking any necessary follow up action.
- 3.8 In general, the supervisory oversight of lower bucket institutions places greater reliance on off-site supervision and there will only be periodic visits and/or on-site inspections of the institution. We also leverage more on the work of the external auditors to complement our supervision of these institutions. As the buckets rise from 4 to 1, more resources are allocated to supervise the institutions in the higher bucket with a corresponding increase in supervisory intensity.
- 3.9 The most systemically important bucket 1 institutions are often complex and have business profiles that can change rapidly, particularly when their activities span a number of financial markets. In the event of distress, they pose potentially damaging consequences for systemic stability and market confidence.
- 3.10 Reflecting the need to anticipate promptly as well as respond effectively to risks, our supervisory oversight of these institutions will entail frequent dialogue and interaction with the institutions in order to obtain a detailed understanding of their current and potential areas of risk. This will involve maintaining regular contact and the carrying out of on-site work to keep abreast of developments in an institution, including new business plans and strategy, and changes in operations, risk management systems and controls. These discussions could typically include members of the board of directors, senior management, business heads, internal auditors and risk managers of the institution as well as, in the case of overseas firms, its head office staff and home country regulators.

- 3.11 MAS may temporarily adjust the supervisory intensity of an institution in a particular bucket on a case-by-case basis, for example, when the institution experiences particularly heightened risk in its operation, until the circumstances prompting the heightened risk have improved or the resultant risks have been addressed.
- 3.12 For smaller financial institutions such as financial advisers, insurance brokers and captives that are deemed to be of lower impact, MAS will adopt a lighter touch approach. These institutions may not be risk-assessed individually or have an institution-specific supervisory plan. Instead, they are more likely to be subject to standard, base-level monitoring, where greater reliance is placed on off-site supervision, surveys and thematic reviews.

4 Key Processes in the Supervisory Framework

Impact assessment

- 4.1 The assessment of impact captures the relative importance of an institution within its own sector of the financial services industry. It involves evaluating the potential impact of the institution in the event of distress, such as doubts about solvency, prolonged business disruption, or major conduct of business problems.
- 4.2 MAS has developed criteria for assessing the potential impact of each financial institution on Singapore's overall financial system and the broader economy, as well as on Singapore's reputation. Each institution is assigned an impact rating on the basis of these criteria and the rating is reassessed periodically.
- 4.3 In rating the impact of an institution, MAS considers the financial services sector that the institution operates in as well as the nature and scale of the activities that are carried out. For example, the market share of retail deposits will be an important factor for assessing the impact of banks because a financially-distressed bank with a large retail depositor base could have grave direct consequences on confidence in the banking system and on the wider economy. Another example would be the role played by a bank in the payment system, given the potential impact for such bank to trigger payment system problems and gridlock if it fails to settle its payments.
- 4.4 The criteria we assess comprise a combination of qualitative factors and numerical measures that draw upon the data from regulatory reports filed by financial institutions. They cover aspects of the financial institution such as:
 - relative size and importance in terms of share of activity in different markets;
 - relative scale of retail reach in terms of number of customers and representatives, and of type of business; and
 - criticality to the stable functioning of and confidence in the financial system.
- 4.5 Generally, the larger the institution's intermediary role in critical financial markets or in the economy or the greater its reach to retail customers, the higher would be its impact rating.

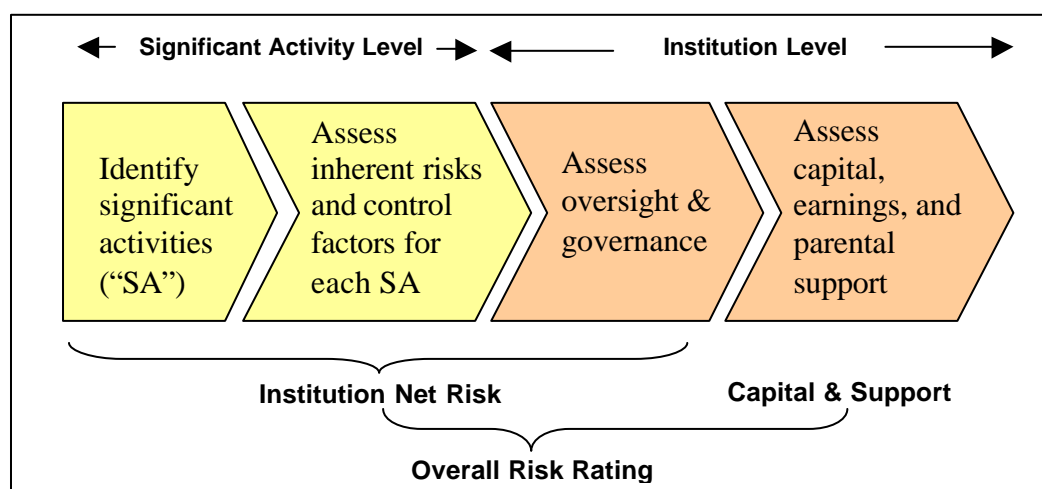
Risk assessment - CRAFT

- 4.6 Risk assessment serves to identify and assess the risks that financial institutions pose to our supervisory objectives. The resultant risk rating serves, as described in paragraph 3.2, as an input to the impact and risk model used to assign institutions to one of four supervisory buckets. The risk assessment is also used as a basis for developing a supervisory plan to address the risks identified.
- 4.7 MAS uses a single risk assessment system - Common Risk Assessment Framework and Techniques (CRAFT) – to assess the risks of a financial institution irrespective of the financial services sector it is operating in. CRAFT uses the main business activities of the financial institution as basic units of risk assessment. Through this activity-based approach, CRAFT is sufficiently flexible to be applied in a consistent manner to all classes of financial institution supervised by MAS.
- 4.8 The activity-based approach further enables MAS to have a deeper understanding of the external and internal factors that may adversely affect the financial institution or its customers through the activities it conducts, and to better align our risk assessment process with how institutions organise and manage the risks of their activities. Such an approach is also in response, firstly, to the need for sharper focus in the risk analysis of increasingly complex activities and products where multiple risks are taken and/or bundled together and, secondly, to the advancement in activity-specific risk management and control practices.

COMMON RISK ASSESSMENT FRAMEWORK AND TECHNIQUES (CRAFT)

Overall Risk Rating			
Institution Net Risk			Capital & Support
Inherent Risks	Control Factors	Oversight & Governance	
<ul style="list-style-type: none"> • Credit / asset • Liquidity • Market • Operational • Technology • Insurance • Market conduct • Legal, reputational and regulatory 	<ul style="list-style-type: none"> • Risk management systems and control • Operational management • Internal audit • Compliance 	<ul style="list-style-type: none"> • Board of directors • Senior management • Head office / parent company 	<ul style="list-style-type: none"> • Capital • Earnings • Parental support
<< Assessed at Significant Activity Level >>		<< Assessed at Institution Level >>	

- 4.9 The Overall Risk Rating of an institution is based on an assessment of inherent risks and control factors, of oversight and governance arrangements, and of financial strength factors, as described in greater detail below. A four-point rating scale is used to rate all components.
- 4.10 The Overall Risk Rating reflects MAS' assessment of the level of risks that may affect the safety and soundness of the institution, or the transparency and fair-dealing of its market conduct practices. Rated as High, Medium High, Medium Low, or Low, the rating is reassessed periodically.
- 4.11 MAS encourages institutions to develop risk management best practices that are commensurate with their business and risk profiles. Financial institutions engaging in more complex or riskier business activities must be able to demonstrate that their risk management capabilities match their risk appetite as well as the scale and complexity of their operations. Institutions are also expected to adopt business practices that deal fairly with their customers and counterparties. MAS will impose higher supervisory requirements on institutions that do not manage their risks to a commensurate standard.
- 4.12 The main elements of the CRAFT risk assessment process are illustrated in the chart below.



- 4.13 Explanations of the components of inherent risks and control factors, oversight and governance, and capital and support are shown in the Appendix.

Identify significant activities

- 4.14 The risk assessment process starts by identifying the individual activities that are material to the institution, known as “significant activities”. For example, an insurance company’s significant activities may include motor insurance or the investment of insurance funds. They could include corporate lending or retail banking for a bank. For a securities broker, its significant activities are likely to be those of dealing in securities and the provision of custodial services. For locally incorporated financial groups, the identification of significant activities is done on a group basis, taking into account both their Singapore and overseas operations.
- 4.15 The significance of an activity is determined relative both to its importance in achieving the institution’s business objectives or strategies, and to its influence on the operating and financial condition of the institution. Both qualitative and quantitative criteria are used.
- 4.16 Some examples of the criteria that may be considered include:
- Quantitative: financial measures (assets, revenue, premiums, capital, etc), risk measures such as risk or economic capital or risk-weighted assets or staff headcount (number of representatives, salespersons, etc).
 - Qualitative: brand value, strategic importance, or criticality to ongoing operations.

Assess inherent risk and control factors

- 4.17 Within each significant activity, MAS assesses the key inherent risks before assessing the control factors that are put in place to manage and control these inherent risks.
- 4.18 We have identified eight categories of inherent risk that are generally applicable to financial institutions. They are:
- credit or asset risk;
 - liquidity risk;
 - market risk;
 - operational risk;
 - technology risk;
 - insurance risk
 - market conduct risk; and
 - legal, reputational and regulatory risk

- 4.19 We first determine which of the above risk categories are applicable. The level of each applicable inherent risk is then assessed, based on the nature and characteristics of the activity.
- 4.20 The next step is to examine the ability of the institution to manage and control the inherent risks appropriately. Such capacity will include effective risk measurement, management and control processes, effective day-to-day management, and independent oversight of those processes. MAS assesses four control factors:
- risk management systems and controls;
 - operational management;
 - internal audit; and
 - compliance

Assess oversight & governance

- 4.21 The role of oversight and governance rests with the board of directors and senior management of an institution. They are the custodians of good corporate governance and are responsible for ensuring that the institution's activities are conducted in a safe and sound manner, and in line with high standards of professionalism and sound business practice.
- 4.22 In the case of foreign institutions operating in Singapore, MAS assesses the effectiveness of the institution's board, senior management, head office, or parent company in providing stewardship, oversight and governance of the institution's operations in Singapore. The role of the head office or parent company in oversight and governance is assessed as it often has considerable influence over the business strategies as well as the conduct and risk management of activities in Singapore.
- 4.23 For locally-incorporated financial groups, MAS assesses the effectiveness of the institution's board and senior management in providing stewardship, oversight and governance of both their Singapore and overseas operations.
- 4.24 The assessments of oversight and governance, and of the risk profiles of significant activities will generate the institution's risk profile, or Institution Net Risk. The Institution Net Risk reflects the effectiveness of risk control factors and of oversight and governance in mitigating the inherent risks of the institution's activities.

Assess capital & support

- 4.25 Lastly, the institution's current capital and potential support are assessed. Capital and support constitute the financial resources available to the institution to absorb losses so as to ensure it remains solvent and able to meet its obligations to customers.
- 4.26 Capital and earnings are both sources of financial strength for an institution's safety and soundness. MAS assesses the adequacy and quality of the institution's capital and earnings in the context of its current risk profile and its planned business activities. The viability of foreign institutions operating in Singapore is also influenced by the ability (i.e. financial health) and willingness of their head office and parent company to support the Singapore operation. We reflect this element of dependence in the assessment of parental support, which also takes into account the effectiveness of supervision by the home country regulator.
- 4.27 We derive the Overall Risk Rating of the institution from the assessments of the institution's risk profile and of capital and support. This overall assessment is essentially based on judgment. A positive assessment of capital and potential support, when viewed in relation to the unique circumstances of each institution, may mitigate Institution Net Risk. However, capital and support, no matter how substantial, can never be considered substitutes for appropriate risk oversight of the institutions' activities.

Development of a supervisory plan

- 4.28 The supervisory plan sets out systematically the particular areas of supervisory coverage, selects the range of supervisory tools, establishes any remedial action required and determines the desired timeframe for the resolution of any issue of supervisory concern.

Areas of coverage

- 4.29 The plan is closely related to the impact and risk assessment of the institution. It identifies and scopes the areas for supervisory attention and details the work planned on the significant activities, risk management processes and governance issues that have been identified as areas of supervisory concern in the risk assessment. Areas assessed to be higher-risk will receive more frequent and closer attention than lower-risk ones.

Supervisory tools

- 4.30 MAS has available a broad range of supervisory tools. These tools can be broadly categorised into diagnostic (used to identify and monitor risks) and remedial (used to mitigate risks and remedy shortcomings). We judge which tools are most appropriate to achieve desired supervisory outcomes effectively and efficiently. We will leverage, to the extent feasible, on the work of the institution's own functions such as internal audit, compliance or risk management, as well as of other stakeholders such as the external auditors, the head office or parent company, and home country or other overseas regulators.
- 4.31 Diagnostic tools seek to identify problems at institutions at an early stage. This allows MAS to engage the institution before these problems become a serious threat to our supervisory objectives. To learn more about the institution's businesses and risk management practices, MAS may need to ask institutions for more information if there are information gaps or where there has been substantial change in the activities of the institution.
- 4.32 Remedial tools will in many cases require the institution to take action and work with MAS to achieve a specific outcome. For instance, in our inspection MAS may come across certain weak controls and governance practices. We will then require the institution to remedy the shortcomings and subsequently to provide us with progress reports on the remedial actions taken.

Resolution timeframes

- 4.33 The supervisory plan is outcome-oriented. For instance, diagnostic work will seek to confirm whether or not a particular risk or concern has substance and is material. Remedial work will set clear plans to mitigate risks or remedy shortcomings. The plan for resolution of an issue or supervisory concern will include the timeline for achieving the desired outcome. In the example mentioned in paragraph 4.32 above, the intended outcome is that the institution assures itself that its internal control and governance processes are rendered effective within the timescale agreed.
- 4.34 MAS monitors the progress of planned supervisory activities and the resolution of supervisory issues, and reviews the effectiveness of supervisory tools used against the expected outcomes.

Supervision in practice

- 4.35 The risk-based supervisory framework and each of the interrelated supervisory processes described earlier respond in a dynamic manner to keep pace with the changes taking place within institutions and the environment in which they operate.
- 4.36 For example, an institution may make an acquisition or embark on a new line of business. To determine how this affects MAS' supervision, we may gather more information and meet with the institution to further understand the changes and their potential effect on its operations and risk profile. These are then factored into MAS' assessments of the institution's impact and risk and may result in an overall change in the intensity of supervisory activities.
- 4.37 The supervisory plan may then identify new areas for closer supervisory attention, whether through off-site or on-site work. As the work is undertaken, initial concerns in relation to the acquisition or new business will be clarified. New weaknesses may be identified, some of which may lead to further supervisory activity and revision of the supervisory plan. At the same time, the institution may need to take action to address issues of supervisory concern that have been confirmed.
- 4.38 Thus, the supervisory plan is revised as needed to reflect feedback from the diagnostic and remedial tools or to react to market developments or to other specific events that may alter the risk profile of the institution. Financial institutions should facilitate this process by keeping MAS informed of any significant developments affecting the institution. At a minimum, MAS will update the supervisory plan in connection with each periodic review of the risk assessment of the institution.
- 4.39 There may, however, be instances where identified risks escalate. Where the institution's problems are less serious, and if the institution's management is assessed to be willing and able to take prompt and effective action to deal with the problems, remedial tools may include moral suasion through oral advice, written recommendations, or supervisory warnings.
- 4.40 However, where the risks of the institution escalate into serious problems, for instance, when there is a serious breach of rules and regulations, or where MAS believes the institution will not take appropriate remedial action on its own, MAS will not hesitate to take stronger action. This can include formally requiring institutions to appoint independent professional parties to conduct reviews of the institution's internal controls or valuation of assets and liabilities, issuing directives with the force of law which require the institution to scale back activities that give rise to excessive risk or to increase

financial resources in order to support its operations, or taking enforcement action for regulatory breaches and publishing regulatory actions taken in relation to market conduct issues.

- 4.41 In resolving the problems faced by the institution, there may be circumstances where the head office or parent company needs to be engaged or where the remedial action needs to be taken in cooperation with home country or other overseas regulators.
- 4.42 In this ongoing process of supervision, MAS seeks to allocate its limited supervisory resources to best achieve our supervisory objectives. It is in the interest of all parties for MAS, financial institutions and stakeholders to work closely together.
- 4.43 MAS will co-ordinate with the institution if onsite work is to be carried out to gather information about the institution's operations, to follow up on issues identified from previous work, or to undertake qualitative assessment of internal controls and/or risk management processes. Under ordinary circumstances MAS will notify institutions of planned visits or inspections so as to minimise disruption to the institution arising from our onsite work, although unannounced visits or inspections will sometimes be necessary. At the same time, institutions are expected to extend their full co-operation to our supervisory activities.
- 4.44 We encourage financial institutions to seek clarification when they are unclear about the supervisory activities that MAS is undertaking with respect to their institution or about the actions expected of them.

Appendix: Explanation of the components of inherent risks and control factors, oversight and governance, and capital and support

INHERENT RISKS	
Credit or Asset Risk	The risk of loss arising from the failure of an obligor (e.g. borrower, counterparty, reinsurer, etc.) to perform according to the terms and conditions of his contract/agreement with the institution, as well as a loss in value of the institution's assets due to deterioration in credit quality of the obligor.
Liquidity Risk	The risk that an institution will be unable to meet expected and unexpected current and future cash flow needs hence affecting its daily operations or financial condition. It arises from the mismatch of maturities of cash inflows and outflows.
Market Risk	The adverse effect on asset value due to adverse movements in the level and volatility of the market rates or prices (e.g. interest rates, exchange rates, equity prices, commodity prices, credit spreads, etc.) of the underlying asset.
Operational Risk	The risk of loss arising from complex operations, inadequate internal controls, processes and information systems, organisational changes, fraud or human errors, or unforeseen catastrophes (including terrorist attacks and natural disasters).
Technology Risk	Any potential adverse outcome, damage, loss, violation, failure or disruption arising from the use of or reliance on computer hardware, software, devices, systems, applications and networks. This risk is usually related to system flaws, processing errors, software defects, operating mistakes, hardware breakdowns, system failures, capacity inadequacies, network vulnerabilities, control weaknesses, security shortcomings, malicious attacks, hacking incidents, fraudulent actions or inadequate recovery capabilities.
Insurance Risk	The risk of loss resulting from inadequate pricing, making wrong judgments in the selection, approval and retention of risks to be insured or under-estimation of insurance policy liabilities.
Market Conduct Risk	The risk of loss or harm to consumers and counterparties arising from undesirable market conduct practices by an institution and/or its representatives, and/or their inability or unwillingness to comply with the requisite market and business conduct requirements.
Legal, Reputational and Regulatory Risk	The risk of loss arising from unenforceable contracts and adverse judgments, negative publicity regarding an institution's business practices, or its inability or unwillingness to comply with laws, rules and regulations. It includes the propensity for an institution to be used for money laundering and terrorist financing activities.

CONTROL FACTORS	
Risk Management Systems and Controls	The effectiveness of risk management systems and internal controls in managing the risks inherent in the institution's activities.
Operational Management	The effectiveness of line management (local and/or cross-border), department heads, etc, in the planning, directing and controlling of the day-to-day operations of an institution's business activities and in ensuring that policies, processes, control systems, staff levels and experience are in place, and are sufficient to effectively assess, manage and mitigate risks inherent in the institution's activities.
Internal Audit	The effectiveness of the internal audit function in providing independent assurance of the effectiveness of, and adherence to, the institution's risk management, control, and governance processes.
Compliance	The effectiveness of the compliance function in providing independent oversight of the management of the institution's compliance with all laws, regulations, codes of conduct, and standards of good practice relevant to the activities of the institution in the jurisdictions in which it operates.

OVERSIGHT AND GOVERNANCE	
Oversight and Governance	The effectiveness of an institution's board, senior management, and head office in providing strategic direction and oversight of an institution's operations. The assessment of Oversight and Governance takes into account an institution's corporate governance structure and practices, and the ability of the board and management to ensure that activities are conducted in a safe and sound manner and that the institution's dealings with customers are transparent and fair in line with high standards of professionalism and sound business practice.

CAPITAL AND SUPPORT	
Capital	Capital is a source of financial strength to cushion an institution against unexpected losses. The assessment of Capital takes into account an institution's track record in capital management, capital management process and whether its capital level and quality provide an adequate buffer against unexpected losses arising from its existing and planned risk exposures, and against future market distress.
Earnings	Earnings absorb normal and expected losses from ongoing operations and represent an internal source of incremental capital to support growth or to replenish reserves in the event of unexpected losses. The assessment of Earnings takes into account the sustainability and quality of an institution's earnings, as well as whether earnings are sufficient to support the operations and meet the capital and provision needs. The impact on earnings of changes in the operating environment and in the strategic plans of the institution is taken into account in the assessment.
Parental Support	The viability of foreign institutions operating in Singapore is also influenced by the financial health of their head offices or parent companies. This element of dependence is reflected in Parental Support. The assessment of Parental Support takes into account the ability and willingness of the head office, parent, or shareholders to provide financial support to the Singapore entity, as well as the effectiveness of supervision of the home country regulator.