Chapter One

Introduction

1.1 The primary purpose of the *Guide* is to provide guidance on the concepts and definitions, and sources and techniques, for the compilation and dissemination of the *Financial Soundness Indicators* (FSIs) identified by the IMF's Executive Board (see Table 1.1). The *Guide* is intended to encourage compilation of FSIs and promote cross-country comparability of these data, as well as assist compilers and users of FSI data.

1.2 FSIs are indicators of the current financial health and soundness of the financial institutions in a country, and of their corporate and household counterparts. They include both aggregated individual institution data and indicators that are representative of the markets in which the financial institutions operate. FSIs are calculated and disseminated for the purpose of assisting in the assessment and monitoring of the strengths and vulnerabilities of financial systems. They support the work of macroprudential analysis, which is the assessment and surveillance of the strengths and vulnerabilities of financial systems, with the objective of enhancing financial stability and, in particular, limiting the likelihood of failure of the financial system.

1.3 FSIs are a relatively new body of economic statistics that reflect an amalgam of influences. This is evident from the conceptual framework described ahead. On the one hand, there are concepts drawn from prudential and commercial measurement frameworks, which have been developed to monitor individual entities. Other concepts are drawn from macroeconomic measurement frameworks, which have been developed to monitor aggregate activity in the economy. Given a degree of flexibility in interpreting the guidance, to develop the data set out in this *Guide* these frameworks can be drawn upon, and advice is provided on reconciling the needs of the *Guide* with these sources. However, some new data sources may need to be developed. In this regard, the *Guide* serves as a benchmark or reference point for future development work, and as a reference document for technical assistance to support the compilation efforts.

Table 1.1: Financial Soundness Indicators: The Core and Encouraged Sets

Core Set	
Deposit-takers	
Capital adequacy	Regulatory capital to risk-weighted assets
	Regulatory Tier I capital to risk-weighted assets
Asset quality	Nonperforming loans to total gross loans
	Nonperforming loans net of provisions to capital
	Sectoral distribution of loans to total loans
	Large exposures to capital
Earnings and profitability	Return on assets
	Return on equity
	Interest margin to gross income
	Noninterest expenses to gross income
Liquidity	Liquid assets to total assets (liquid asset ratio)
	Liquid assets to short-term liabilities
Sensitivity to market risk	Duration of assets
	Duration of liabilities
	Net open position in foreign exchange to capital
Encouraged Set	
Deposit-takers	Capital to assets
	Geographical distribution of loans to total loans
	Gross asset position in financial derivatives to capital
	Gross liability position in financial derivatives to capital
	Trading income to total income
	Personnel expenses to noninterest expenses
	Spread between reference lending and deposit rates
	Spread between highest and lowest interbank rate
	Customer deposits to total (non-interbank) loans
	Foreign currency-denominated loans to total loans
	Foreign currency-denominated liabilities to total liabilities
	Net open position in equities to capital
Other financial corporations	Assets to total financial system assets
	Assets to GDP
Nonfinancial corporate sector	Total debt to equity
	Return on equity
	Earnings to interest and principal expenses
	Net foreign exchange exposure to equity
	Number of applications for protection from creditors
Households	Household debt to GDP
	Household debt service and principal payments to income
Market liquidity	Average bid-ask spread in the securities market 1/
	Average daily turnover ratio in the securities market 1/
Real estate markets	Real estate prices
	Residential real estate loans to total loans
	Commercial real estate loans to total loans

1/ Or in other markets that are most relevant to bank liquidity, such as foreign exchange markets.

1.4 In the short term, as experience is gathered on compiling this new set of macro statistics, compilers in many countries may rely on existing statistical sources that are based on accounting standards that vary across countries, and users should be aware that this may limit cross-country comparability. Looking ahead, the work of the Basel Committee on Banking Supervision (BCBS) on revising its Capital Accord could affect the calculation of FSIs primarily sourced from supervisory data.

Background

1.5 By allocating funds for viable investment projects and providing payment services, healthy and robust financial systems help increase economic activity and welfare. However, experience has shown that financial systems are prone to instability and crisis that have the potential to disrupt financial activity and impose huge and widespread costs on the economy. With the liberalization of financial markets and the greater recognition of the importance of systemic effects of financial sector weakness, policy makers and others are paying increasing attention to the stability of national financial systems. So the long-established surveillance of individual institutions is being supplemented by the monitoring of risks to the stability of national financial systems arising from the collective behavior of individual institutions. This work is known as macroprudential analysis.

1.6 The traditional focus of prudential data reporting and analysis is on the *microprudential* objective of limiting the likelihood of failure of individual institutions. *Macroprudential* analysis has a somewhat different set of data requirements due to its focus on identifying risks emerging in the financial system as a whole. For instance, while increased lending to the real estate market, or to the corporate sector, may be profitable to a bank in the short-term, if such lending is mirrored in other banks, the resultant sharp expansion of the banking sector's exposure to real estate, or the corporate sector's debt to

equity ratio might raise concerns from a macroprudential viewpoint. In such instances, risks considered exogenous to any one institution, are endogenous to the financial system.[1]

1.7 Further, the magnitude and mobility of international capital flows has made it increasingly important to monitor the strength of financial systems and their resilience to capital flow volatility. The financial sector is often the conduit between global financial markets and domestic borrowers and, as such, is sensitive to external capital markets conditions, as well as domestic developments. Moreover, weaknesses in domestic banks can have a pervasive influence on consumer and investor confidence, capital flows, and public finances, as well as on domestic financial intermediation.

1.8 Attention also needs to be given to balance sheet and profitability indicators of nonfinancial corporations. Financial weaknesses such as a high leverage ratio and/or low profitability of these corporations can directly affect the strength of the financial sector because of their impact on asset quality. Also, financially weak corporations can render an economy more susceptible, and less resilient, to external shocks.

1.9 The recognition of the importance of macroprudential analysis has increased the need for supporting data. This consideration led the IMF to undertake in 2000 a survey of its member countries and of regional international agencies to identify those indicators considered to be most relevant to the macroprudential work of national and regional authorities, both as compilers and users of data. A summary of the results is presented in Appendix I. Also, in 1999, the IMF and the World Bank launched the Financial Sector Assessment Program (FSAP), designed to identify financial system strengths and vulnerabilities and to help to develop appropriate policy responses. This work has involved the use of FSIs, drawing upon available data sources in countries.

1.10 Using the results of the survey of member countries, the experience from FSAPs, and discussions with international agencies interested in this work, a list of key FSIs was

[1] Crockett (2000) elaborates on these ideas.

developed and presented to the IMF's Executive Board in June 2001. From this meeting, the list of core and encouraged FSIs set out in Table 1.1 was agreed (agreed FSIs), based on various selection criteria.[2] To help prioritize future work, the core set is considered relevant for all countries, while the encouraged set might be developed as country circumstances require. At the same time, the Board encouraged the IMF's staff to produce a *Compilation Guide* to help compilers develop the agreed indicators, and undertake further development work in this field.

1.11 The draft *Guide* is a comprehensive document that explains not just how to compile the core and encouraged FSIs but also sets out the conceptual frameworks from which the data series required to calculate the FSIs can be drawn. A summary of the guidance for each agreed FSI is provided in Appendix II. Also, in the process of consultation, some associated data series have been suggested that assist in the interpretation of FSIs, such as information on the structure of a country's financial system. However, in reading the *Guide* compilers should be aware that in terms of data requirements the priority is the core set of FSIs, followed by the encouraged FSIs, and that the other series outlined go beyond the list agreed by the Board. Also, while as far as possible the *Guide* draws on existing data systems, compiling FSIs most likely will add to the statistical burden. The extent of any additional costs will depend on a number of factors including the amount of data already available, the structure of the financial system, and the timescale over which the data are developed.

Some key aspects of the *Guide*

1.12 From the work undertaken, it is clear that the range and type of FSIs compiled and disseminated differs among countries, but that given their pivotal role in all national economies, FSIs for the deposit-takers—particularly the core set—are considered central to

[2] The chosen criteria were (1) focus on the core markets and institutions, (2) analytical significance, (3) revealed usefulness through high scores in the survey results, (4) relevance in most circumstances, and (5) availability. The core set met all the chosen selection criteria, and provide data covering all main categories of bank risk, while the encouraged set met some but not all. For further details, see page 66 of the *IMF Occasional Paper: Financial Soundness Indicators: Analytical Aspects and Country Practices*.

any analysis of the current health and soundness of a national financial system. This is reflected in the *Guide*. Also, because of the importance of the credit quality of their assets to the profitability and soundness of deposit-takers, information on their main customers—particularly the corporate and household sectors—is relevant for such analysis. The need for FSIs for other financial corporations will vary depending upon their importance within the economy.

1.13 FSIs need to cover several aspects of financial health and soundness. In a financial system, capital strength is important for all types of institutions, especially as a "cushion" against unexpected losses. In monitoring financial soundness of financial institutions, important considerations are also the quality and composition of their assets, and exposures to financial risk. Information on income and expenses are also critical—without sufficient income generation, no entity is financially healthy or sound. For nonfinancial corporations, the focus is on their liabilities and their ability to meet their financial obligations as they fall due. In short, FSIs are intended to be used to monitor the development of positions (and exposures) and flows that could indicate increased financial sector vulnerability and to help assess the potential resilience of the sector to adverse circumstances.

1.14 Because most FSIs are in the form of ratios, definitions are required for the underlying series used to calculate FSIs. Further, in considering the definitions for these individual series, it is apparent that many are derivable from information contained in balance sheets and income statements. So for all sectors including deposit-takers and nonfinancial corporations, the *Guide* starts from the presumption that, as far as possible, the underlying series should be drawn from internally consistent financial statements that encompass an income and expense statement and a balance sheet. Calculating FSI ratios from data series derived from internally consistent financial statements enhances the analytical usefulness of the indicators, and contributes to the quality control of published data due to the well-established inter-linkages between financial statement items.

1.15 In developing guidance on definitions, the *Guide* draws upon the *System of National Accounts, 1993* (*1993 SNA*) and related manuals,[3] and the international accounting standards (IAS), developed by the International Accounting Standards Board. Both these international measurement systems have developed their guidance within the context of internally consistent financial statement frameworks. For deposit-takers, the work of the BCBS is also drawn upon. While there are many similarities between the international measurement systems, the conceptual approach in the *Guide* allows for flexibility in order to accommodate differences between them and meet the needs of macroprudential analysis. Further, Appendix III explains how the guidance in the *1993 SNA* and IAS corresponds with the requirements of the *Guide*. The *Guide* also provides methodological guidance on measurement issues that are new at the international, or even national level, such as for real estate prices and certain financial market information.

1.16 Despite the reliance to the extent possible on existing measurement systems, the needs of macroprudential analysis are different from those the existing systems are addressing, and this is reflected in the framework developed.

1.17 For deposit-takers, macroprudential analysis monitors the profitability, capital strength, quality and composition of assets, and exposures to financial risks faced by the sector as a whole. Supervisors have similar interests but at the level of the individual institution. Further, some supervisors adapt accounting guidance to meet the needs of individual institutions, whereas the consistent application of accounting rules across all entities in the sector is essential to avoid asymmetries in the macro-based data.

1.18 The sector focus and the consistent application of accounting rules is applicable for other macro-based data such as the national accounts, monetary aggregates and the BIS's International Banking Statistics (IBS). However, there are differences in analytical focus. National accounts-based data are focused on production, income and its distribution and use,

[3] Including the IMF's *Monetary and Financial Statistics Manual* (*MFSM*), 2000.

and the financial claims and liabilities generated. Compared with these data sets, the FSI framework focuses more on capital strength and profitability making essential the avoidance of double counting capital, and activity based on that capital, at the sector level. So, macroprudential analysis favors consolidation of group accounts, whereas national accounts data focuses on the gross output and activity of individual entities within groups. Further, the build up of inter-deposit-taking claims and liabilities among unrelated groups is of macroprudential interest, not least to monitor the potential for contagion, whereas monetary aggregates focus on deposit-takers' claims and liabilities vis-à-vis other sectors and so eliminate such inter-sectoral positions.

1.19 Further it is worth noting that compared with other measurement systems, the extent of institutional coverage for macroprudential purposes is not clearly determined. While the *Guide* requires the compilation of FSIs on a consolidated group basis, this can involve consolidating the activities of branches and subsidiaries with those of the parent entity regardless of location—more akin to the commercial accounting and supervisory approaches for individual entities. Data on domestically located operations can be separately distinguished in order to illustrate the linkage with other macroeconomic information. Both approaches have their strengths and weaknesses, which are discussed in Chapter 5.

1.20 More generally, the *Guide* recognizes that the analysis of FSIs must take into account country specific circumstances. Most relevant to any assessment is the structure of a country's financial system, for instance, the number of deposit-takers, extent of cross-border ownership, relative size of other financial institutions, and extent to which security markets are used to raise capital. All these factors can influence the interpretation of FSIs. So, guidance is provided on the types of information on financial system structure that could be disseminated, both to help provide context for the analysis of FSIs—including through peer group and dispersion analysis—and to provide information relevant for policy makers and other users. Also important is the strength of a country's financial infrastructure, such as the level of development of financial markets and payment systems. The *Guide* provides some advice on the type of information that could be disseminated.

1.21 Also, in developing the framework for use in compiling data, consultations with experts raised some points that go beyond the requirements of the agreed FSIs. First, any framework developed should be flexible to allow for future growth as analytical needs evolve; the idea of developing sectoral financial statements for macroprudential purposes is consistent with this concern. Second, some additional series were recommended to be included that meet specific financial soundness needs, such as information on contingent liabilities and the value of assets transferred to special purpose entities; these ideas are reflected as memorandum items to the sectoral financial statements in Chapter 4. Third, as far as possible, any framework should draw on and take account of the related needs of other international agencies; Fund staff have consulted with other agencies in the process of producing this draft.

1.22 Finally, experience demonstrates that FSIs are only one input into macroprudential analysis. Also relevant are indicators that provide a broader picture of economic and financial circumstances, such as asset prices, credit growth, Gross Domestic Product (GDP) growth (including its components), inflation, and the external position; the institutional and regulatory framework for an economy, in particular through assessments of compliance with international financial sector standards; the outcome of stress tests;[4] and, as mentioned above, the structure of the financial system and strength of the financial infrastructure. More generally, FSI data can potentially complement the use of early warning systems and contribute to crisis prevention.

1.23 Stress testing, in particular, is a tool that when used in combination with FSIs can enhance their usefulness in several ways. First, estimated FSIs are typically the output of stress tests and, in some cases, an "intermediate" input also. For example, the impact of a macroeconomic shock is usually measured as the impact on the capital ratio FSIs. Second, stress tests can provide information on the linkages between different FSIs—in stress tests that make use of on banks' credit risk models, the "shock" is worked through nonperforming

[4] Stress tests are techniques used to assess the vulnerability of portfolios to major changes in the macroeconomic environment or to exceptional but plausible events.

loans (NPLs), providing a direct measure of the linkage between changes in the NPL-based FSIs and the capital ratio FSIs. Further, stress tests provide a complementary but more direct way to assess certain types of risks that are hard to measure precisely using FSIs, including the risk of interbank contagion.

Structure of the *Guide*

The *Guide* is presented in four parts: Conceptual Framework—covering Chapters Two to Five; Specification of Financial Soundness Indicators—covering Chapters Six to Nine; Compilation of Financial Soundness Indicators—covering Chapters Ten and Eleven; and Dissemination and Data Analysis—Chapters Twelve and Thirteen. There are also a number of appendices.

Conceptual Framework

1.24 The structure of this part is as follows:

- Chapter Two identifies and defines the main institutions and markets that typically constitute a financial system.
- Chapter Three provides the accounting principles for FSIs.
- Chapter Four provides an accounting framework and sectoral financial statements from which the series required to calculate FSIs can be identified and defined.
- Chapter Five explains how data can be aggregated and consolidated.

Specification of Financial Soundness Indicators

1.25 The structure of this part is as follows:

- Chapter Six defines each of the agreed indicators for the deposit-takers.
- Chapter Seven defines each of the agreed indicators for other sectors.

- Chapter Eight defines the indicators for financial markets.

- Chapter Nine provides advice on the compilation of data on real estate prices.

Compilation of Financial Soundness Indicators

1.26 Chapters Ten and Eleven provide an overview of the compilation of FSIs.

Dissemination and Data Analysis

1.27 Chapter Twelve discusses the dissemination of data and Chapter Thirteen discusses peer group and descriptive statistics.

Appendices

1.28 Appendix I summarizes the survey of countries conducted in 2000 to understand more about countries' needs for, and compilation practices relating to, FSIs. Appendix II summarizes in tabular form the detailed information on each agreed FSI contained in the *Guide*. Appendix III provides information on how to derive FSI series from both the national accounts and commercial accounting guidance. Appendix IV provides a set of numerical examples. Appendix V provides a glossary of terms for financial corporations.

Terminology

1.29 Different methodologies can use different terms for the same item or instrument. So it is necessary to note that the terms used by the *Guide* are consistent with those used in the agreed list of financial soundness indicators. So whereas supervisors might use phrases such as "allowance" and "impaired assets," the *Guide* uses the phrases "provision" and "nonperforming loans." Other terms are drawn from the *1993 SNA*—particularly for those items in the sector accounts that the *1993 SNA* also covers—and from supervisory sources. In a few instances, the text notes alternative terms for the same item/instrument at the appropriate point in the text.