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Central Banks and Financial Stability: A Survey of Financial Stability Reports[1]

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Abstract

In recent years, many central banks have increased their focus on financial stability, and—as the most visible result—started publishing regular reports on financial stability. This text reviews this new area of central banks' work, concentrating the central bank's role in financial stability, definition of financial stability, objectives of financial stability reports, their role in central banks' accountability, links to other central central bank work, and the overall assessments presented in these reports. It illustrates the main areas of improvement in the existing FSRs.

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[2] Economist, International Monetary Fund. I have benefited from previous efforts in this area by a number of IMF staff, in particular Andrea Maechler, Srobona Mitra, and Sean Craig. The text reflects useful discussions with Michal Hlaváček, Tomáš Holub, Arild Lund, Mark O'Brien, and Mark Swinburne, and comments by Marta Castello-Branco, Alexander Tieman, Klaus Schaeck, and participants in a regional conference on financial stability issues at Sinaia, Romania, and seminars at the IMF, Central Bank of Russia , and Central Bank of Trinidad and Tobago. All errors are my own.

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1 Introduction

In the last three decades, financial stability has emerged as an important public policy objective. The main reasons for the increased interest in financial stability included high costs of financial crises and their increased frequency, the explosive growth in the volume of financial transactions, and the increased complexity of new instruments.[3]

One of the most visible signs of this increased focus on financial stability has been the rapidly growing number of financial stability reports (FSRs) published by central banks in the last decade. As of end-2005, almost fifty central banks were publishing FSRs, and many others were considering publication.

No comprehensive survey of the available FSRs has been undertaken until the paper by Čihák (2006), which surveyed 160 FSRs published in 47 countries over a period of more than 10 years (altogether, more than 10,000 pages of text, graphs, and tables).[4] This text builds on

[3] See, for example, Crockett (1997) and Goodhart (2006). As regards the costs, Hoggarth, Reis, and Saporta, (2001), for instance, suggest that average output losses during banking crises amount to 15–20 percent of annual GDP. As regards the frequency, Bordo and others (2001) find there was only 1 banking crisis in 1945–70, but 19 in 1971–2000. The frequency of financial crises appears to have declined in the 2000s, however.

[4] Table 2 contains a list of the FSRs surveyed in this paper. The survey also involved publications by more than 100 other central banks to find out whether these documents or their parts satisfy the criteria for an FSR (reviewed were 157 central bank websites listed at http://www.bis.org/cbanks.htm as of December 31, 2005).

Čihák (2006), focusing on issues relating to the definition of financial stability, the aim of FSRs, and the central bank's role in financial stability.

This text is organized as follows. Section 2 starts by discussing what is an FSR and how it differs from other central bank reports. Section 3 overviews which central banks publish FSRs. Section 4 discusses several important features of FSRs, in particular definition of financial stability in FSRs, objectives of an FSR, its role in central bank accountability, and the overall assessments in FSRs. Section 5 illustrates, based on the survey, the main areas of improvement in the existing FSRs. Section 6 concludes.

2 What is An FSR?

Defining an FSR is far from straightforward. Central banks and other institutions have been producing a number of outputs covering the financial sector, but varying widely in a number of respects. Virtually every central bank publishes an annual report or another report with some coverage of the financial sector. However, what is typically understood by an FSR is a more specific product.

For the purpose of this paper, an FSR is defined as a regular, self-contained central bank publication that focuses on risks and exposures in the financial system. The key elements of this definition are as follows:

- ***Focus on risks and exposures.*** General interest publications, such as an annual report with a section describing the performance of the banking sector, do not qualify as FSRs if they only discus performance without covering risks and exposures. Also, central banks in some countries publish separate reports on financial system structure or related development issues (e.g., the European Central Bank publishes a regular report on banking structures in the European Union). These reports have an important function, but are not considered an FSR for the purposes of this study.

- ***Systemic coverage.*** Some rating agencies publish reports on soundness of individual institutions or even groups of institutions. The focus of these reports is on individual institutions. By contrast, FSRs cover financial systems. Even though some calculations in FSRs are based on individual institutions' data, most results are presented in aggregate form and the focus of the report is on systemic issues rather than on soundness of individual institutions.[5] The systemic focus of the FSR reflects its role in the framework of financial sector regulation and supervision. In particular, FSR is part of central banks' macroprudential surveillance function (Table 1).
- ***Publisher.*** Most FSRs are published by central banks. In several countries, a report on risks in the financial system is also published by a separate regulatory agency. At a global level, stability reports are also published by international organizations, in particular the IMF (Global Financial Stability Report), with a more general take on financial stability than the country-specific stability reports. There have also been several reports on financial stability published by private sector participants. Those reports, while very interesting, tended to be one-off endeavors rather than regular documents.[6] This survey focuses on regular reports published by central banks.

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[5] Some central banks issue two publications on the risks and exposures in the financial sector: for example, the European Central Bank publishes a Financial Stability Review and a more narrowly focused report on banking sector stability in the European Union; the National Bank of Poland publishes an end-year Financial Stability Report, and a more narrowly focused mid-year Financial Stability Review. The analysis in this text focuses on the more broadly designed publication as the FSR.

[6] See, for example, Counterparty Risk Management Policy Group (2005). The authors of the report include private sector practitioners from leading Wall Street houses. The report contains numerous recommended actions in three categories: (i) those that individual institutions can and should take on their own initiative; (ii) those that can be taken only by institutions collectively in collaboration with industry trade groups; and (iii) those that require complementary or co-operative actions by the official sector.

- ***Self-contained nature.*** FSRs are generally stand-alone documents, even though in some cases they are a part of another publication (e.g., an annual report or a bulletin). To qualify as an FSR, a text has to be relatively self-contained and have analytical depth. For example, a short section or several paragraphs describing banking sector developments in an annual report would generally not qualify as an FSR. A table of macroprudential indicators with a short commentary would also not qualify. By contrast, Deutsche Bundesbank's roughly 80-page *Report on the stability of the German financial system* in 2004 clearly qualified, even though it was "only" a chapter in the central bank's monthly report.[7]
- ***Regularity of publication.*** FSRs are regular (typically annual or semi-annual) publications. A one-off report on the financial sector is not considered an FSR.

FSRs also have other, secondary features that vary from country to country. For example, they use different titles, such as *Financial Stability Review* (e.g., Bank of England or Bank Indonesia), *Financial System Review* (e.g., Bank of Canada), *Monetary and Financial Stability Report* (Hong Kong Monetary Authority), or *Macroprudential Analysis* (Croatian National Bank). Structure, length, and format also vary substantially.

Table 1. General Structure of Financial Sector Regulation and Supervision

Type of Market Failure	Systemic Instability	Asymmetric Information	Market Misconduct	Anticompetitive Behavior
Regulatory/supervisory area	Macroprudential surveillance (financial stability)	Microprudential supervision (individual institutions)	Business supervision (consumer protection)	Competition

[7] In 2005, the Bundesbank moved to stand-alone FSRs.

Sub-sectors	Banks	Central bank, monetary authority	One	One	Separate agency responsible for competition in general
	Insurance companies		or	or	
	Capital market firms		more	more	
	Other financial firms		agencies	agencies	

Source: The author, adapted from Čihák and Podpiera (2006).

3 Who Publishes FSRs?

The first FSRs were published in the mid-1990s in the United Kingdom and several Nordic countries. The number of central banks publishing FSRs increased rapidly, from 2 in 1995 to almost 50 at the end of 2005 (Figure 1).[8] In addition, several central banks produce FSRs internally and are considering their publication in the future.[9]

The characteristics of FSR-publishing central banks can be summarized as follows (Table 3):

- ***Income level.*** The FSRs are published by central banks in high-income countries and emerging markets (Figure 2). Low-income country central banks do not generally publish FSRs, even though many cover financial sector issues to some extent in annual reports or other publications. Also, some countries publish more general reports on financial sector performance, while others publish separate reports on financial sector structure/development.
- ***Geography of FSRs.*** Geographically, Europe accounts for a majority of the published FSRs. In the euro area, FSRs are published both by the ECB and by the individual central banks. Of the 30 OECD countries, 25 publish FSRs.

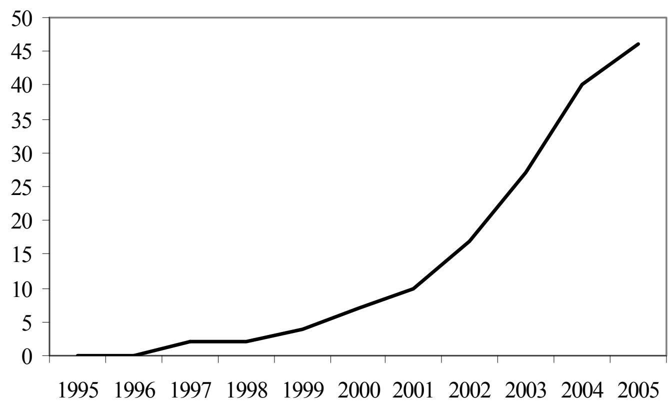
[8] See the list of the identified FSRs in Appendix I. In some countries, e.g., in Norway and the United Kingdom, a report similar to an FSR is published also by a supervisory agency. In the Euro area, FSRs are published both by the European Central Bank and many of the member central banks.

- ***Institutional basis for financial stability analysis.*** Despite the growing interest in financial stability in central banks, a direct reference to financial stability as a central banks' objective is rare to find in the basic central bank legislation. If financial stability is included, it is more likely to be found among "tasks" than among "objectives." Financial stability is often bundled together with other "standard" tasks, such as the support for smooth functioning of the payment system, regulation and supervision of the banking system, or lender-of-the-last resort functions.[10] Financial stability and the central bank's role in it is more commonly specified in other documents, such as mission statements or memoranda of understanding (if there is an integrated financial supervisory agency outside the central bank). Central banks typically explain their interest in the stability and general health of the financial system by their lender of last resort role and their monetary policy objectives (e.g., Healey, 2001). The correlation between the publication of FSR and the explicit inclusion of financial stability among objectives in central bank legislation is therefore positive, but rather weak (Table 3).
- ***Organizational structure.*** The emphasis on financial stability is often reflected also in the organizational structure of the central bank. Banks publishing FSRs are more likely to have a separate organizational unit covering financial stability, but the relationship is not one-to-one (some central banks publish FSRs while covering the issue within bank supervision, research, or another organizational unit; and there are central banks that have a separate organizational unit, but do not publish an FSR).

[9] Given the lack of consistent information on internal FSRs, this survey focuses on the publicly available ones.

- ***Financial Sector Assessment Program.*** In 1999, the IMF and the World Bank launched the Financial Sector Assessment Program (FSAP), providing countries with independent assessments of their financial sector and its regulatory framework. Participation in the program is voluntary. Interestingly, most FSRs published in the early years of the program (up to 2004) were by central banks that have participated or volunteered to participate (Table 3). This indicates that the reasons for publishing FSRs were similar to those prompting countries to volunteer early for the FSAP.

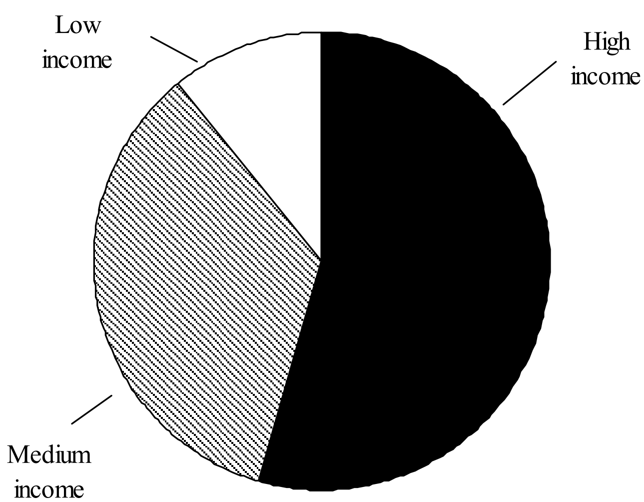
Figure 1. The Number of Countries Publishing FSRs, 1995–2005



Source: the author's calculations, based information available from individual central banks.

Figure 2. Countries Publishing FSRs, by Income Level

[10] See Healey (2001) and Oosterloo and de Haan (2003) for an overview of institutional frameworks for financial stability analysis in a number of countries.



Source: author's calculations based on individual FSRs.

Table 2. Financial Stability Reports Included In This Survey

Country	Publishing Institution	Frequency	Starting Year	Website Address (short)
Argentina	Banco Central de la Rep. Argentina	Semi-annual	2004	www.bcra.gov.ar
Australia	Reserve Bank of Australia	Semi-annual	1999	www.rba.gov.au
Austria	Österreichische Nationalbank	Semi-annual	2001	www.oenb.at
Belgium	National Bank of Belgium	Annual	2002	www.nbb.be
Brazil	Banco Central do Brasil	Semi-annual	2002	www.bcb.gov.br
Canada	Bank of Canada	Semi-annual	2002	www.bankofcanada.ca/en/
Chile	Banco Central de Chile	Semi-annual	2004	www.bcentral.cl
China	People's Bank of China	Annual	2005	www.pbc.gov.cn/english/
Colombia	Banco de la República Colombia	Semi-annual	2002	www.banrep.gov.co
Croatia	Croatian National Bank	Semi-annual	2005	www.hnb.hr
Czech Rep.	Czech National Bank	Annual	2004	www.cnb.cz
Denmark	Denmarks Nationalbank	Annual	2002	www.nationalbanken.dk
Euro Area	European Central Bank	Annual	2004	www.ecb.int
Estonia	Eesti Pank	Semi-annual	2003	www.eestipank.info
Finland	Suomen Pankki	Annual	2003	www.bof.fi
France	Banque de France	Semi-annual	2002	www.banque-france.fr
Germany	Deusche Bundesbank	Annual	2004	www.bundesbank.de
Ghana	Bank of Ghana	5x per year 2/	2005	www.bog.gov.gh
Greece	Bank of Greece	Annual 3/	2004	www.bankofgreece.gr
Hungary	National Bank of Hungary	Semi-annual	2000	english.mnb.hu
Hong Kong SAR	Hong Kong Monetary Authority	Semi-annual	2003	www.info.gov/hkma
Iceland	Central Bank of Iceland	Semi-annual	2000	www.sedlabanki.is
Indonesia	Bank Indonesia	Semi-annual	2003	www.bi.go.id

Country	Publishing Institution	Frequency	Starting Year	Website Address (short)
Ireland	Central Bank and Financial Services Authority of Ireland	Annual	2000	www.centralbank.ie
Israel	Bank of Israel	Annual	2003	www.bankisrael.gov.il
Japan	Bank of Japan	Annual	2005	www.boj.or.jp
Kenya	Central Bank of Kenya	Annual	2004	www.centralbank.go.ke
Korea	Bank of Korea	Semi-annual	2003	www.bok.or.kr
Latvia	Bank of Latvia	Semi-annual	2003	www.bank.lv
Macao	Monetary Authority of Macao	Semi-annual	2005	www.amcm.gov.mo
Netherlands	De Nederlandsche Bank	Semi-annual	2004	www.dnb.nl/dnb/homepage.jsp
New Zealand	Reserve Bank of New Zealand	Semi-annual	2004	www.rbnz.govt.nz
Norway	Norges Bank	Semi-annual	1997	www.norges-bank.no
Philippines	Bangko Sentral ng Pilipinas	Semi-annual	1999	http://www.bsp.gov.ph/
Poland	National Bank of Poland	Semi-annual	2001	www.nbp.pl
Portugal	Banco de Portugal	Semi-annual	2004	www.bportugal.pt/default_e.htm
Russia	Bank of Russia	Annual	2001	www.cbr.ru
Singapore	Monetary Authority of Singapore	Semi-annual	2003	www.mas.gov.sg
Slovak Republic	National Bank of Slovakia	Annual	2003	www.nbs.sk
Slovenia	Bank of Slovenia	Annual	2004	www.bsi.si
South Africa	Reserve Bank of South Africa	Semi-annual	2004	www.reservebank.co.za
Spain	Banco de España	Semi-annual	2002	www.bde.es
Sri Lanka	Central Bank of Sri Lanka	Annual	2004	www.lanka.net
Sweden	Sveriges Riksbank	Semi-annual	1997	www.riksbank.com
Switzerland	Schweizerische Nationalbank	Annual	2003	www.snb.ch
Turkey	Türkiye Cumhuriyet Merkez Bankasý	Semi-annual	2005	www.tcmb.gov.tr
United Kingdom	Bank of England	Semi-annual	1996	www.bankofengland.co.uk

Notes:
1/ Additionally, in Norway and the United Kingdom, there are also FSR-like reports published by the unified supervisory agencies. In Russia, two central bank reports qualify as stability reports.
2/ Available on the website since 2005 as "Volume 5." Earlier volumes not available to the author.
3/ A chapter on banking sector and its supervision included in the annual report. Given the extent of the chapter and its relatively self-contained nature, it is classified as an FSR since 2004 for the purpose of this text.

Table 3. Correlations between FSR Publication and Other Characteristics 1/

	FSR published	FS in a separate organizational unit	FS among official objectives	Independent monetary policy	Banking supervision in the central bank	Advanced economy	FSAP took place or requested by authorities 2/
FSR published	1.00	0.91	0.13	-0.31	-0.26	0.55	0.37
FS in a separate organizational unit	0.91	1.00	0.14	-0.25	-0.29	0.54	0.33
FS among official	0.13	0.14	1.00	0.02	0.01	0.17	0.08

objectives							
Independent monetary policy	-0.31	-0.25	0.02	1.00	0.24	-0.61	-0.26
Bank supervision in central bank	-0.26	-0.29	0.01	0.24	1.00	-0.24	-0.16
Advanced economy	0.55	0.54	0.17	-0.61	-0.24	1.00	0.27
FSAP took place or requested 2/	0.37	0.33	0.08	-0.26	-0.16	0.27	1.00

Source: the author's calculations based on individual FSRs.
1/ Each row and column corresponds to a dummy variable indicating whether the respective feature is present (1) or not (0). The values in the table are pairwise correlation coefficients for these dummy variables. FS refers to financial stability.
2/ FSAPs up to end-2004.

4 Selected Features of FSRs

To assess FSRs, Čihák (2006) has identified five main elements of the report (its aims, the overall assessment presented, the issues covered, the data, assumptions, and tools being used, and other features such as the reports' structure) and three key characteristics (clarity, consistency, and coverage).[11] Table 7 presents this "CCC framework" in a matrix format.

To keep this text focused, this section concentrates on definition of financial stability in FSRs, objectives of an FSR, its role in central bank accountability, and the overall assessments in FSRs. The "CCC" framework contains also other important elements, such as the scope and method of analysis. Those are covered in more detail in Čihák (2006).

[11] As explained in more detail in Čihák (2006), the approach is based on Fracasso, Genberg, and Wyplosz (2003), who surveyed inflation reports by 19 inflation-targeting central banks. Their study assessed the quality of the inflation reports by using the following criteria: clarity, consistency, and coverage of key issues (policy objectives, decision-making, analytical framework, input data, presentation of forecasts, evaluation of past forecast and policy). The study found positive link between report quality and policy predictability.

4.1 How Do FSRs Define Financial Stability?

A basic question faced by a reader trying to understand an FSR is what the central bank means by the term financial stability. Some FSRs attempt to define the term, recognizing that financial stability is a complex concept. The FSRs often make clear that they are not focused on problems in individual institutions, but rather on system-wide issues. Furthermore, there is a general understanding that financial stability refers to smooth functioning of the components of the financial system (financial institutions, markets, and payments, settlement, and clearing systems). The prevailing view is be that the analysis of financial stability covers phenomena that (i) impair the functions of the financial system; (ii) create vulnerabilities in the financial system; and (iii) lead to a negative impact on the financial system and thereby on the economy as a whole. However, the exact definitions vary across the FSRs.

The survey of FSRs suggests that financial stability can be defined narrowly or broadly.[12] At one end of the spectrum, some FSRs define financial stability as the antithesis of financial crises: system-wide episodes in which the financial system fails to function and the institutional underpinnings of a monetary economy—payments and settlements systems, the acceptability of bank deposits as money—are disrupted. Such episodes can be very costly, so policy-makers need to assess the (usually low) risks of their occurrence. Financial crises of this sort are of particular concern to central banks because they disrupt the transmission mechanism of monetary policy (see Table 1). Table 4 illustrates this definition: financial crises are results of significant shocks in a situation when the system has large exposures (bottom right cell in the table); all other situations are identified with financial stability.

[12] See Schinasi (2006) for a theoretical discussion of the concept of financial stability.

The definition of financial stability has obvious impacts on the scope of the financial stability reports. The broader the definition of instability, the more potential threats to stability (and the longer the report).[13]

Table 4. Definitions of Financial Stability: Overview

		Significant Exposures?	
		Not apparent	**Apparent**
Significant shocks?	**No**	Financial stability	Financial stability
	Not now, but plausible	Financial stability	Financial fragility
	Yes	Volatility (turbulences, bubbles)	Financial crisis

Source: the author, based on a survey of the literature.
Note: The table covers only definitions based purely on risks and exposures. It does not cover some of the broader definitions mentioned in the text, in particular those incorporating efficiency.

Many FSRs use broader definitions of financial instability (see Table 5 for examples). In particular, most include also situations when the system—even though not in a state of crisis—is fragile, i.e., has significant exposures to plausible risks. Using such a broader definition of instability calls for the use of addition instruments. In particular, stress tests are used to distinguish whether the system has significant exposures to the plausible risks. If the stress tests suggest the existence of such exposures, the system is deemed fragile; otherwise, it is considered stable (robust).

Some FSRs also include under the heading of instability those situations when a system is subject to significant shocks, even though it does not seem to have major exposures. These include situations of major volatility in financial markets (asset price bubbles), with uncertain impacts on financial institutions. Including these situations under the heading of instability is

[13] The fact that a broader definition of instability is correlated with longer stability reports may seem paradoxical at first, but becomes obvious on a closer observation. It is mostly because the FSRs, despite their name, are really reports about potential risks to stability rather than about stability itself.

potentially more controversial than including the situations of fragility, because the system does not have apparent exposures. However, some FSRs do this, partly in recognition of the limitations of the available tools to uncover “hidden” exposures, e.g., those relating to institution-to-institution contagion or correlations of exposures across a range of portfolios. These FSRs, while noting the absence of apparent exposures, maintain that it is prudent to watch closely the sources of risk.

Some FSRs define financial stability even more broadly, as the situation when the *efficiency* of financial intermediation between ultimate borrowers and ultimate lenders is not subject to significant adverse shocks. If this definition is adopted, the remit of policy-makers is correspondingly broader, and their analysis more encompassing. The assignment of responsibility to the central bank for safeguarding financial stability is less clear-cut if this definition is chosen. Supervisory and competition authorities, for example, would naturally have a close interest (see Table 1).

Table 5. Examples of Definitions of Financial Stability in FSRs

	Definition	**Where?**
Canada	Explicit definition not provided, but a box on the inside cover lists components of the financial system and notes that serious disruptions to one or more of these components “can create substantial problems for the entire financial system and, ultimately, for the economy as a whole.” It also notes that “inefficiencies in the financial system may lead to significant economic costs over time and contribute to a system that is less able to successfully cope with periods of financial stress.”	Box on the inside cover.
Denmark	Explicit definition not provided, but the FSR contains it implicitly in a description of its purpose, namely “to assess whether the financial system is so robust that any problems in the financial sector do not spread and impede the functioning of the financial markets as efficient providers of capital for companies and households.” It also notes that “The approach is to consider the general risks to the financial system rather than the situation of the individual financial institutions.”	Introduction
Euro Area	“A condition where the financial system is capable of performing well at all of its normal tasks and where it is expected to do so for the foreseeable future.”	Preface
Iceland	The FSRs made several references to Andrew Crockett’s (1997) definition that financial stability broadly hinges upon the stability of the key institutions and markets that make up the financial system. “This requires (1) that the key institutions in the financial system are stable, in that there is a high degree of confidence that they continue to meet their contractual obligations without interruption or outside assistance; and (2) that the key markets are stable, in that participants can confidently transact in them at prices that reflect the fundamental forces and do not vary substantially over short periods when there	Various places in the FSR

	have been no changes in the fundamentals."	
Norway	"Financial stability means that the financial system is robust to disturbances in the economy and is able to mediate financing, carry out payments and redistribute risk in a satisfactory manner. Experience shows that the foundation for financial instability is laid during periods of strong growth in debt and asset prices. Banks play a central part in extending credit and mediating payments and are therefore important to financial stability."	Box on the inside cover.
Sweden	"The analysis of financial stability concerns the ability to withstand unforeseen shocks to financial companies as well as to the financial infrastructure, that is, the systems that are required for making payments and for trading and delivering financial products. The analysis of financial companies concentrates on the four major Swedish banking groups because it is these that are of crucial importance for the payment system's stability."	Foreword
Switzerland	"A stable financial system can be defined as a system where the various components fulfill their functions and are able to withstand the shocks to which they are exposed. This report focuses on two vital elements in the system: the banking sector and financial market infrastructure."	Introduction
United Kingdom	Explicit definition not provided, even though implicitly the overview section reviews the elements that the Bank of England assesses (e.g., the major institutions' profitability, capitalization, resilience to shocks).	...

Source: the author, based on the individual country FSRs.

Most FSRs include a general definition of stability. With the possible exception of the Swiss National Bank's FSR, no FSR includes an operational definition of stability, which would narrow down the range of indicators considered when assessing stability of the financial system. This issue is particularly relevant for FSRs using the broader definition of financial instability that includes resilience to shocks, because the distinction of stable and unstable systems is likely to depend on the degree of plausibility of the potential shocks to which a system is subjected. The absence of operational definition of financial stability contrasts sharply with the framework for price stability, where an operational definition of price stability has played a key role in recent years, with the move towards more explicit inflation targets (Table 6). Financial stability is a more complex concept than price stability, and expecting that it can be boiled down to a single indicator and a single target range would not be realistic (reflecting also the fact that research in this area is not as developed as in the price stability area). Nonetheless, clarifying a set of basic indicators that need to be looked at and a set of "threshold values" would be a useful way of clarifying the framework underlying the assessment of financial stability. Of course, having a summary indicator or a basic set of indicators of course does not mean that there is no role for other indicators or for non-quantitative factors.

The Swiss National Bank's FSR is the first example of an FSR going in this direction: it highlights a "stress index" as a key summary indicator. Haldane, Hoggarth, and Saporta (2004) suggest that the Bank of England, even though it does not include such an operational definition in the FSR, is in fact going this route. A range of potential early warning signals of crisis are assessed relative to some (explicit or more usually implicit) threshold values. If any of these indicators breaches a threshold, this sets an amber light flashing. This serves not as a signal of impending crisis, but instead as a prompt for a detailed assessment of that particular risk. The authors noted that there was (at least as of 2004) "still considerable work to be done in refining and extending the list of indicators the Bank of England routinely monitors, in particular micro-level indicators of bank and financial sector resilience and health, domestically and internationally."

Table 6. Schematic Comparison of Price Stability and Financial Stability

	Price Stability	**Financial Stability**
General definition	Clear	A range of definitions
Operational definition	Clear (variable and target), especially in inflation targeting	Typically not specified
Legal base for central bank's role	Based on law	Based on interpretation of law
Scope of central bank's responsibility	Full responsibility	Partial/shared responsibility, exact boundaries in some countries unclear, in others delineated by a memorandum of understanding
Research	Well developed	Developing

Note: This is of course only a schematic comparison that does not apply to all countries. For example, numerous central banks do not have an explicit inflation target. Nonetheless, the adoption of such targets has clearly been a trend in recent years.

4.2 What Are the Objectives of an FSR?

Before discussing reasons for publishing FSRs, it is useful to start by asking what are the ***main reasons against*** publishing an FSR. Based on a survey of the literature and on discussions with staff of central banks that do not publish FSRs, the main reasons against publishing an FSR can be grouped into the following three categories:

- ***Financial sector issues are too sensitive to be discussed openly in the public.*** It is possible to conceive of circumstances in which publication of a central bank analysis at a time of increasing risk to financial stability might precipitate the very shocks or crisis that the central bank was trying to avoid, by inducing liquidity problems in particular markets or financial institutions. That danger is reduced if the central bank has established a track record of unbiased analysis during a period of low risks to financial stability. The experience of FSR-publishing central banks so far does not provide an example of an FSR that triggered liquidity problems in the system.
- ***Central banks have an incomplete degree of control over policy outcomes in the area of financial stability.*** One of the basic rules of good inflation reports is "say what you do—do what you say." For FSRs, however, what the central bank can do has arguably a much less impact on financial stability than it can have on achieving an inflation target, partly because achieving financial stability requires actions from other involved parties, such as other agencies and market players. However, because the desired outcome depends on a number of parties, not the least including the market players, putting out a high-quality report important: if the report is persuasive, it may be able to trigger a desired action by the market players.

- ***Preparing and publishing FSRs requires resources.*** The resource intensity of the exercise may be an important argument, particularly in smaller central banks with very limited resources. It would be unwise to launch an FSR when its quality could not be sustained or the report could not be produced regularly. However, three mitigating factors should be taken into consideration. First, the drafting team of FSRs in most central banks is relatively small, often in the range of 4–10 people. Second, in small central banks with more limited resources, it may be useful to choose a relatively narrower operating definition of financial stability—as recommended by Bowen, O'Brien, and Steigum (2003) in the case of Norges Bank—which means that the scope of the report can be relatively smaller and require less staff. Third, for most central banks the choice is not really whether to produce such a report or not. Given the importance of financial sector stability for their overall objectives, most central banks have to monitor financial sector stability and typically produce regular reports on the subject for internal purposes. The real question in most cases therefore is what are the costs of turning such reports into publications.

None of the above reasons against publishing FSRs appears strong on a closer inspection. What are then the ***main reasons for*** publishing FSRs? Based on the survey of FSRs, the ultimate objective of the FSR for most central banks is contribution to financial stability. Some FSRs even recognize reduction of financial instability as the ultimate objective. For example, the Bank of Canada flags in a cover box of its FSR that it is "one avenue through which it seeks to contribute to the longer-term robustness of the domestic financial system."

How can FSRs contribute to financial stability? They can do so by (i) improving the understanding of (and contributing to dialogue on) risks to financial intermediaries in the economic environment; (ii) alerting financial institutions and market participants to the possible collective impact of their individual actions; and (iii) building a consensus for financial stability and the improvement of the financial infrastructure. An FSR can add value to work undertaken by private agents in the financial sector itself, because a central bank can draw on its macroeconomic expertise and its role in payments and settlements.

Some FSRs list a range of general aims, which relate to the above mechanism of contributing to financial stability, and can be seen as subordinate to the "ultimate objective." In particular, FSRs often stress the objective of monitoring and presenting to the public the central bank's appraisal of developments relevant for the financial sector and of their impact financial sector stability. Other often stated objectives include encouraging an informed debate on financial stability issues, disseminating information for transparency purposes, and influencing market participants. Some central banks see their FSRs as a tool to encourage greater cooperation between supervisory and regulatory authorities. Some see their stability reports as a way of building trust in the financial services industry, based on permanent monitoring of risks and pointing of dangers to participants (for examples, see Čihák (2006)).

Publication of FSRs is only one of a number of tools that public authorities have to affect financial stability. The authorities can help achieve financial stability by (i) ensuring integrity of payment systems; (ii) regulating and supervising financial intermediaries to limit risk exposures and ensure that there are appropriate buffers; (iii) working on crisis management, mitigating effects of international spillovers, and minimizing risk of asset price collapses; and (iv) monitoring new risks.[14] The FSR should play a key role in monitoring of new risks.

[14] This list is based loosely on Allen, Francke, and Swinburne (2004).

An additional reason for publishing an FSR is the positive impact that such a regular publication may have on the central bank itself. FSRs typically do not mention this as an explicit aim, but it is certainly important in the consideration on whether to start publishing an FSR. Bowen, O'Brien, and Steigum (2003) argue that publication subjects the central bank's analysis to scrutiny by a wide range of possible critics; it therefore provides a discipline for surveillance work as to its quality, frequency, and timing; and it demonstrates that the central bank is fulfilling its remit. Hence publication can fulfill an important role in improving the accountability and transparency of the central bank.

4.3 Role in Central Bank Accountability

In central banks that have financial stability among their objectives (or are able to derive it from their objectives), it is useful for think about the FSRs as one of their accountability instruments. As noted for example in Allen, Francke, and Swinburne (2004), the FSR could serve as a vehicle to allow stakeholders to form a view about how effectively the central bank is undertaking its broader financial stability responsibilities. The concept of stakeholders is viewed in a broad sense, including the industry and the general public. In some cases, there may be a specific accountability with respect to a relevant overseeing body. For example, in Norway, the FSR is submitted first for a discussion at a meeting of Norges Bank's Executive Board, and the main conclusions of the FSR are then summarized in a submission to the Ministry of Finance. In most countries, a launch of the FSR is accompanied by presentations to the media, market analysts, and in some cases academics. In most cases, FSRs are prominently displayed on the central bank's website, typically in a special section entitled "Financial Stability." FSRs are also made available in hard copies.

Central banks follow a gradual approach to launching FSRs. For example, Norges Bank's staff started preparing internal reports from 1995. Since 1997, the bank started publishing semiannual external reports. The reports first appeared in the central bank journal, as extracts from a fuller report. Since 2000, they have been published in a special publication.

FSRs are part of a broader communications strategy of the central bank. The strategy comprises a number of other reports, with different aims and audiences. Virtually all central banks publish an Annual Report and a general publication focused on macroeconomic developments (e.g., Inflation Report in inflation targeting countries).

In the financial sector, there may also be several central bank publications. For example, the European Central Bank supplements its *Financial Stability Review* by reports on *EU Banking Sector Stability* and *EU Banking Structures.* In the United Kingdom, the Bank of England publishes a separate Payment Systems Oversight Report, which is featured prominently alongside its Financial Stability Review. In Brazil, the central bank's FSR is accompanied by a set of reports on the composition and evolution of the national financial system and on the payments system. In Croatia, in addition to the FSR (*Macroprudential Analysis*) the central bank also publishes a more descriptive report focusing on changes in the structure and functioning of the banking system and its supervisory and regulatory mechanism (*Banks Bulletin*). In Poland, in addition to its *Financial Stability Reviews* and *Financial Stability Reports*, the central bank also publishes *Financial System Development Reports*, which focus on the structure of the system. A number of FSR-publishing central banks that carry out supervision also have separate reports on supervisory developments. Several FSR-publishing central banks also issue separate brochures on financial stability that are less technical and addressed to a more general audience than an FSR.

4.4 Overall Assessments in FSRs

Most of the overall assessments in FSRs have been positive. In a survey of the latest issues of the FSRs, virtually all (96 percent) have started off with a positive overall assessment of soundness of the domestic system (characterizing the health of the financial system as being, e.g., "in good shape," "solid," or at least "improving"). There are several possible reasons why the positive assessments are so prevalent:

- *As good as it gets.* The global financial system has been characterized by a period of relative calm. There has been no major financial crisis in recent years, and liquidity has been abundant globally. In that sense, FSRs have not yet been put to a real test.
- *Selection bias.* Countries with robust financial systems and well-designed frameworks are more likely to start publishing FSRs than those with weaker financial systems and frameworks. Therefore, the prevalence positive overall assessments in FSRs may simply reflect the fact that the systems reviewed in FSRs are in general in a better shape than those for which FSRs are not available.
- *Presentation bias.* Some central banks may prefer to present the financial system in a positive light, partly because problems may be seen as a result of bad policies, and partly because of the fear that a negative assessment might trigger a decline in confidence in the system. The drawback of this approach is that (i) if problems get unreported for a while, they may accumulate and become more difficult to address than if they were addressed earlier; and (ii) central bank's credibility may get impaired if the reports are perceived as biased. Central banks therefore typically hedge their assessments by noting possible warning signals and external and other risks faced by the system. Some FSRs include these warning signals only as "small

print" in later parts of the report, while others have clear "red flags" in the overall assessment. As an example, Bowen, O'Brien, and Steigum (2003) in their generally positive survey of the Norwegian FSR note that the discussion of weaknesses in the financial system is sometime limited, and illustrate it by a moderate tone used when commenting on unfavorable developments in the insurance sector, which culminated in a government intervention in the fall of 2001. Only in 2002 did the FSR recognize that the sector has gone through a "turbulent" period.

5 How Do Existing FSRs Compare to the Proposed Criteria?

How do the existing FSRs compare to the ideal characterized in Table 7? Ideally, a full assessment should be done by independent experts, such as done in Sweden and Norway (Allen, Francke, and Swinburne, 2004, and Bowen, O'Brien, and Steigum, 2003). In the absence of such a panel of experts, an assessment was carried out by the author of this text, using the proposed CCC framework. As described summarized in Table 7, the framework comprises 26 principles, organized into 5 key elements (aims, overall assessment, issues, tools, structure and other features) and 3 characteristics (clarity, consistency, and coverage). Each FSR was assessed against each of the criteria, on a 4-point scale: 4 (fully compliant), 3 (largely compliant), 2 (partly compliant), and 1 (not compliant).[15] Simple (unweighted) averages were used to arrive at the aggregate gradings.[16]

[15] The principles relating to consistency across reports were assessed only for those central banks where three or more issues of the FSR are available.

[16] Not all the principles are likely to carry the same weight in practice. However, it is difficult to attribute *a priori* weights in a transparent manner. As more data become available, it might be possible to "back-test" the assumption of equal weights and see if better results (e.g., in terms of a correlation between the aggregate grading and a measure of financial sector stability) can be achieved for different combinations of weights.

Carrying out full-fledged assessments under the CCC framework requires good knowledge of the financial systems being covered in the financial stability. Given this author's lack of country-specific expertise (in most cases), the assessment presented here focused on clarity and consistency of the FSRs, and did not examine in detail the principles relating to coverage that would require underlying analysis of the financial system (in particular, principles B4 and C3, requiring FSR to cover the key topics in a sufficiently comprehensive way) and of the available data (principle D5).

The lack of detailed country-specific knowledge was to some extent compensated by the sheer volume of FSRs being reviewed. As part of this project, about 160 documents from 47 countries have been reviewed, comprising more than 10,000 pages.[17]

The result of the analysis (Figure 3) is that most FSRs have an overall grading in the 2–3 range, and only three are in the 3–4 range, suggesting that there are areas for improvement in most existing FSRs. Areas for particular improvements include the specification and clarity of aims of the reports, and the clarity of the overall assessment. Also, for those reports that have been published for a longer period of time, consistency across the reports remains an issue. More specifically, the following are the main gaps in the existing FSRs:[18]

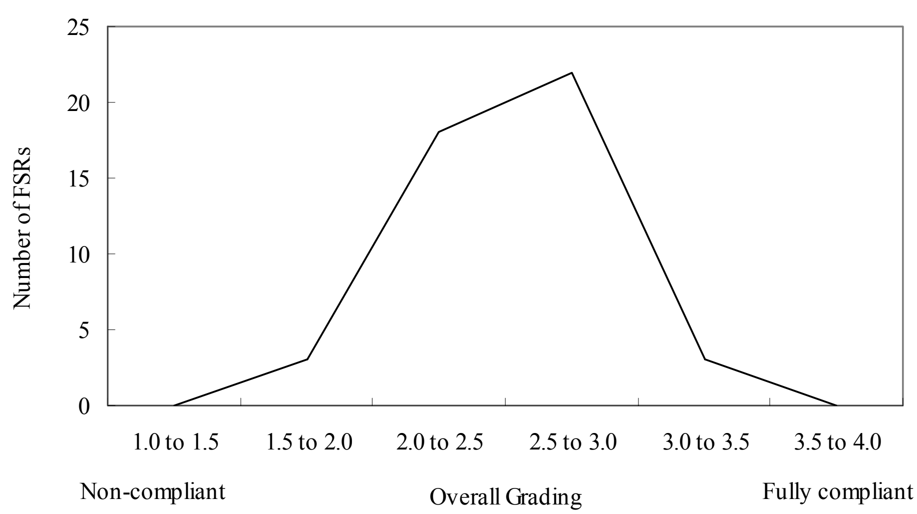
- *More standardized "core."* Many central banks could consider making the core section of their FSR more standardized across reports. In each main subsection, changes relative to the assessment in the previous FSR could be highlighted.

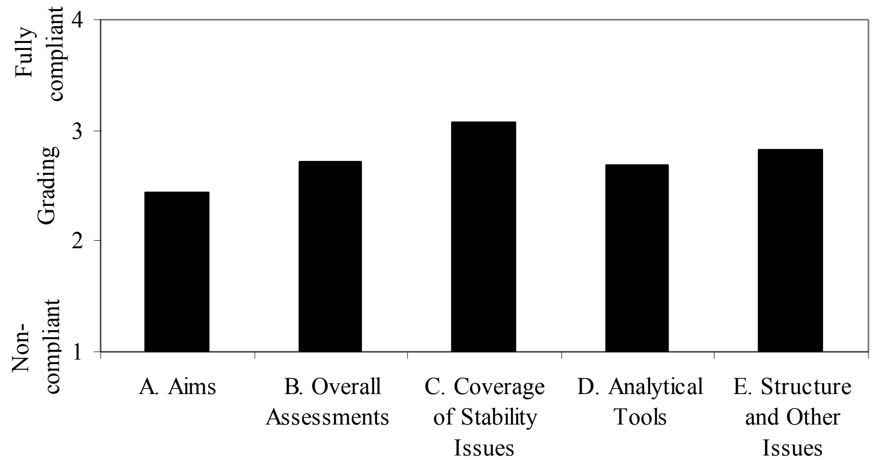
[17] In cases where the central bank publishes two different publications on financial stability, the one that is more comprehensive was included in the assessment.

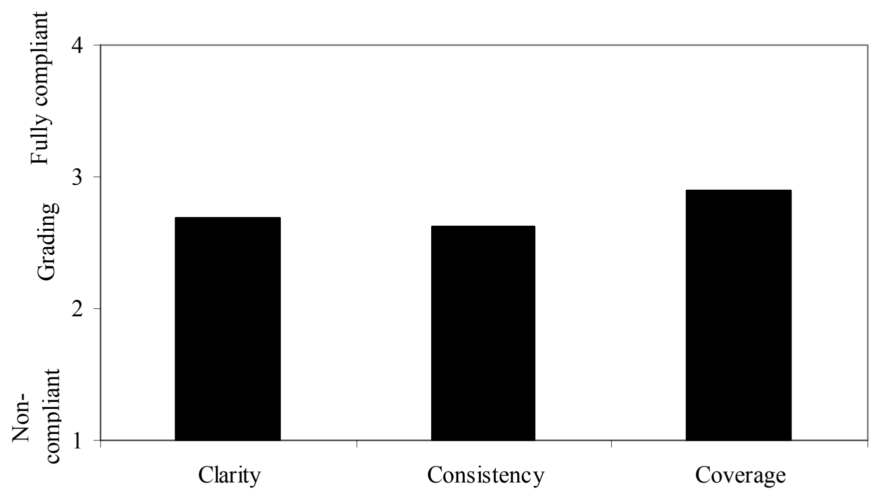
[18] This list of areas for possible improvement focuses on the issues discussed in Section 4. The survey also results in suggestions for improvement in analytical tools, discussed in Čihák (2006).

- *Aims.* Some FSRs do not contain even a very broad definition of aims. Of those that do, many could make the aims more specific, in particular to include the aim to help provide information to be used as one of inputs into market participants' risk assessment procedures, and also the aim to serve as an accountability instrument.
- *Operational definition of financial stability.* Central banks often include a definition of financial stability, but they do so only in very general terms.
- *Underlying data.* FSRs use mostly charts to illustrate the points made in the text. While these are often eye-catching, it makes FSRs much more useful to users if tables with the key underlying data are also made available. These can be included as a separate attachment available on the website, as done e.g. in Sweden and New Zealand.

Figure 3. How Do Existing FSRs Compare to the Proposed Criteria? 1/







1/ FSRs published in 2005. Each of the principles in Table 7 was given the same weight for simplicity.

What factors can explain differences in the quality of FSRs, measured by compliance with the CCC framework? A panel data regression was estimated for the available FSRs. The dependent variable was the overall grading of an FSR and the dependent variables were: (i) the length of time a central bank publishes an FSR; (ii) level of economic development, approximated by GDP per capita; (iii) the importance of the financial system in the economy, approximated by financial sector assets to GDP; and (iv) a dummy variable taking on a value of one if the publishing central bank carries out banking supervision and zero otherwise.

The calculations suggest that gradings for FSRs issued by the same central bank improve with time, as the coverage of the FSR increases, more sophisticated tools are being used, and the central gets more experience with analyzing financial stability and presenting the results in a public document. Gradings are also positively correlated with the economic development, approximated by GDP per capita, which may be a proxy for factors such as relative amount of resources available for the analysis of financial stability or the availability of market-based information. The sign for the size of the financial system is positive, but the estimate is not statistically significant. Interestingly, gradings are on average higher for central banks not directly involved in day-to-day supervision, partly reflecting that the overall assessments in these reports are more candid. [19]

6 Conclusions

The text surveyed the stability reports published by central banks. It noted that there is a growing trend to publish such reports, and that the reports' sophistication—especially in terms of the issues covered and tools used—has been on the rise.

Based on the survey of the available FSRs and a comparison with the proposed benchmarks, it can be concluded that FSRs provide useful insights into how central banks analyze financial stability, but there are areas for improvement. These include clarifying the aims of the reports, providing an operational definition of financial sector soundness,

[19] The underlying results are available from the author upon request. Ideally, one would also like to know whether the quality of an FSRs is related to the inputs into the financial sector work (in terms of resources). However, good data on the inputs are unavailable. Partial data on some of the FSR-publishing central banks suggest that the combination of GDP per capita and the relative size of the financial sector (which are both included in the regression) might be used to approximate the inputs going into the financial stability report.

clarifying the “core analysis” that is presented in FSRs consistently across time, and making available the underlying data.

The survey also suggests that the quality of an FSR (in terms of clarity, consistency, and coverage) published by a central bank improves with time, as the coverage of the FSR increases, more sophisticated tools are being used, and the central gets more experience with analyzing financial stability and presenting the results in a public document. Quality is also positively correlated with the economic development, approximated by GDP per capita, which may be a proxy for factors such as relative amount of resources available for the analysis of financial stability or the availability of market-based information. The size of the financial system has a positive, but insignificant impact. Quality is higher for central banks not directly involved in day-to-day supervision, partly reflecting that the overall assessments in these reports are more candid.

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Table 7. The Proposed "CCC" Framework for Assessing Financial Stability Reports

	Clarity	**Consistency**	**Coverage/Contents**
A. Aims	A1. The definition of financial stability should be clearly indicated. A2. The aims of the report should be clearly indicated.	A3. The definition of financial stability should be a standard part of the report, presented consistently across reports. A4. The statement of aims should be a standard part of the report, presented consistently across reports.	A5. The definition of financial stability should cover both the absence of crisis and resilience to crises. A6. Financial stability should be defined both in general terms and in operational terms. A7. The aims of the report should be comprehensive.
B. Overall assessment	B1. The overall assessment should be presented clearly and in candid terms.	B2. The overall assessment should be linked to the remainder of the FSR. B3. There should be a clear link between the overall assessments over time, making it clear where the main changes took place.	B4. The overall assessment should cover the key topics.
C. Issues	C1. The report should clearly identify the main macro-relevant stability issues.	C2. The coverage of issues should be consistent across the reports.	C3. The coverage of the financial system should be sufficiently comprehensive.
D. Data, Assump-tions, and Tools	D1. It should be clear what data are used to arrive at the results presented in the report. D2. It should be clear what assumptions are being used to arrive at the results presented in the report. D3. It should be clear what methodological tools are being used to arrive at the results presented in the report.	D4. The results should be presented in a consistent manner across the reports.	D5. The report should use available data, including those on individual institutions. D6. The report should use the available tools.
E. Structure and other features	E1. The structure of the report should be easy to follow. E2. Other features of the report—such as its length, frequency, timing, public availability, and links to other central bank reports—should be designed to support its clarity.	E3. The structure of the report should be consistent across time to make it easier to follow for repeat users. E4. The other features of the report should be designed to support its consistency.	E5. The structure of the report should allow covering the key topics. E6. The other features of the report should be designed to support its coverage.

1/ All principles are to be assessed on a 4-point scale: 4 (fully compliant), 3 (largely compliant), 2 (partly compliant), and 1 (not compliant).