



IV SPECIAL FEATURES

A ASSESSING FINANCIAL STABILITY: CONCEPTUAL BOUNDARIES AND CHALLENGES¹

Central banks have a strong and natural interest in safeguarding financial stability. This special feature discusses some key ingredients that are needed for a systematic approach to financial stability monitoring and assessment. A good understanding of what is meant by financial stability and what is meant by financial instability, taken together, can serve to define the boundaries of the scope of the analysis. A balancing of financial efficiency and stability objectives may require an understanding of the safeguarding of financial stability less as a zero tolerance of bank failures or of an avoidance of market volatility, than as avoiding financial disruptions that have adverse consequences for the real economy.

INTRODUCTION

Central banks have a strong and natural interest in safeguarding financial stability. This is especially so because financial institutions, notably banks, are issuers of by far the largest component of the money stock. Similarly, a stable financial system is needed for the effective transmission of monetary policy and for the smooth operation of payment systems. In addition, the condition of the financial system is inextricably intertwined with the performance of the economy. For these reasons, a growing number of central banks around the world now address their financial stability mandates through the monitoring and assessing of financial stability and through the periodic issuing of their findings in public reports. The contents of these publications suggest that financial stability practitioners around the world share some common understandings. To cite just a few, it is more or less taken for granted that:

- finance is fundamentally different from other economic functions such as exchange, production, and resource allocation;

- finance contributes importantly to other economic functions and facilitates economic development, growth, efficiency, and ultimately social prosperity;
- financial stability is an important social objective – a public good – even if it is not widely seen as being on a par with monetary or price stability;
- monetary and financial stability are closely related, if not inextricably intertwined, even though there is no consensus on why this is so.

There is also a growing academic literature, much of it covering specific financial stability topics in considerable depth, and some of it providing rigorous anchors for debating substantive and policy issues. For example, there are extensive literatures dealing with the special role and fragility of banks in finance, the costs and benefits of deposit insurance, and the causes, consequences, and remedies for bank failures. There are also new and growing literatures on market sources of financial fragility and systemic risk more generally.

Despite considerable practical and intellectual progress in recent years, financial stability analysis is still in its infancy compared to macroeconomic and monetary analysis. The various literatures taken together do not yet provide cohesive and practical approaches or tool kits for assessing financial stability, for analysing systemic issues and controversies, or for designing policies to optimise the net social benefits of finance. In short, the discipline lacks a widely accepted and useful framework, and current practices for assessing financial stability tend to be more of an art form than a rigorous discipline or science.

This special feature discusses some key ingredients that appear to be needed for a framework for monitoring and assessing

¹ This special feature draws heavily on J. Fell and G. Schinasi (2005), "Assessing Financial Stability: Exploring the Boundaries of Analysis", *National Institute Economic Review*, No 192, April.

financial stability. In particular, it proposes boundaries that can help in defining the scope of the analysis.² While both the *prevention* and *resolution* of financial problems and crises are core objectives of the framework discussed, this special feature focuses exclusively on prevention, and in particular on *assessing* financial stability.

The rest of this special feature is organised as follows. Section 2 discusses the financial stability challenge including the possible relationship between efficiency and stability, and the need for a system-wide approach. Section 3 examines requirements for a useful framework for assessing financial stability. Section 4 briefly lays out an overarching framework for safeguarding financial stability in which both the prevention and resolution of financial problems and crises are key objectives. Section 5 briefly draws some conclusions. A special feature in the next issue of this review will assess the practical challenges that confront effective financial stability monitoring and assessment.

THE CHALLENGE OF FINANCIAL STABILITY

CHARACTERISING THE CHALLENGE

There are many ways in which to characterise the challenges faced in achieving and maintaining financial stability. Moreover, the nature of the challenge will depend to some extent on the structure and maturity of the economic system. This paper focuses on mature financial systems, for which the challenge of financial stability can be characterised as:

maintaining the smooth functioning of the financial system and its ability to facilitate and support the efficient functioning and performance of the economy.

To achieve financial stability, it is necessary to have in place mechanisms that are designed:

to prevent financial problems from becoming systemic and/or threatening the stability of the

financial and economic system, but without undermining the economy's ability to sustain growth and perform its other important functions.

The challenge is therefore not necessarily to prevent all financial problems from arising. It is not practical to expect that a dynamic and effective financial system would avoid instances of market volatility and turbulence, or that all financial institutions would be capable of perfectly managing the uncertainties and risks involved in providing financial services and enhancing financial stakeholder value. In addition, it would be undesirable to create and impose mechanisms that are overly constraining of the risk-taking of financial institutions or exceedingly protective of financial market stability. Constraints could prove to be so intrusive and inhibiting that they could reduce the extent of risk-taking to the point where economic efficiency is inhibited. Moreover, the mechanisms of protection or insurance could, if poorly designed and implemented, prove counterproductive by creating the moral hazard of even greater risk-taking.

The above quotation “*but without undermining the economy's ability to sustain growth and perform its other important functions*” is an important aspect of the challenge of financial stability. The achievement and maintenance of financial stability should be balanced against other, arguably higher priority, objectives such as economic efficiency. This reflects the notion that finance is not an end in itself but plays a supporting role in improving the ability of the economic system to perform its functions.

² The approach discussed draws heavily on the framework developed in A. Houben, J. Kakes and G. Schinasi (2004), “Toward a Framework for Safeguarding Financial Stability”, IMF Working Paper, No 04/101; G. Schinasi (2003), “Responsibility of Central Banks for Stability in Financial Markets”, IMF Working Paper, No 03/121; G. Schinasi (2004a), “Private Finance and Public Policy”, IMF Working Paper, No 04/120; G. Schinasi (2004b), “Defining Financial Stability”, IMF Working Paper, No 04/187; and G. Schinasi (2005), “Safeguarding Financial Stability: Theory and Practice”, IMF, forthcoming.

EFFICIENCY AND STABILITY

That the challenge is a balancing act can be seen by considering that the likelihood of systemic problems could be limited in practice by designing a set of rules and regulations that restrict financial activities in such a way that the incidence or likelihood of destabilising asset price volatility, asset market turbulence or individual bank failures could be eliminated. However, it is also likely that this type of “stability” would be achieved at the great expense of economic and financial efficiency.

This reasoning leads to the impression, if not conclusion, that there is an *ex ante* trade-off between achieving on the one hand economic and financial efficiency, and on the other economic and financial stability. That is, if the concern is solely with stability, then it may be possible to achieve and maintain this by trading off some efficiency.

The possibility of an *ex ante* trade-off can be illustrated by narrowing the definitions of stability and efficiency. Consider a market for a good whose price is sensitive to incoming information. This characterises many asset prices. In principle, the variability of an asset price could be limited by imposing restrictions in the market that would inhibit the ability of traders to price in every small piece of information. But from a trader’s and investor’s perspective, such restrictions would inhibit the efficiency of the market’s ability to price and allocate resources in the presence of uncertainty.

On the other hand, it is possible to try to maintain efficiency, and even enhance it, while at the same time allowing the financial system room to innovate, evolve and better support the economic system. If the cost of doing so is greater asset price volatility or capital flow volatility, society must decide which point along this trade-off should be chosen. This issue goes beyond the scope of this special feature, however.

THE NEED FOR A SYSTEMIC APPROACH

The challenge of achieving and maintaining financial stability is broader than, and in fact encompasses, the need to limit the impact of asset price instability on the functioning of the overall financial system. In fact, if the financial system is stable, then it will be able to tolerate higher levels of asset price volatility, as well as other financial problems, including those in financial institutions. To jump immediately to the highest level of generality, the challenge of financial stability can be seen as managing the risk of a system-wide problem, or what is known as systemic financial risk, a concept that will be defined more rigorously towards the end of what follows in the next section.

KEY ELEMENTS FOR A FRAMEWORK

The notion of a framework used in this special feature is that of a set of definitions, concepts, and organising principles that impose discipline on the analysis of the financial system. An effective framework would seem to require three important standards. First there must be rigorous definitions and understanding of key concepts, such as what is meant by the terms *financial system*, *financial stability* and *instability*, and systemic, to name just a few. Second, to be most useful for monitoring and policy, the framework’s concepts and definitions ultimately must be either directly measurable or correlated with measures: in other words, the concepts and definitions must have useful and policy-relevant empirical counterparts. Third, the set of definitions, concepts and organising principles, along with their empirical counterparts, must serve the purpose of ensuring internal consistency in the identification of sources of risks and vulnerabilities and in the design and implementation of policies aimed at resolving difficulties should they emerge.

What is meant by the “financial system”? Broadly, the financial system can be seen as comprised of three separable but closely related components. First, there are financial intermediaries that pool funds and risks and then allocate them to their competing uses. Increasingly, financial institutions provide a

range of services, and not just the traditional banking services of taking deposits and making loans. Institutions such as insurance companies, pension funds, hedge funds and financial/non-financial hybrids now supply a range of financial services. Second, there are financial markets that directly match savers and investors, for example, through the issuance and sale of bonds or equities directly to investors. Third, there is the financial infrastructure, comprised of both privately and publicly-owned and operated institutions – such as clearance, payment and settlement systems for financial transactions – as well as monetary, legal, accounting, regulatory, supervisory and surveillance infrastructures.³ Notably, both private and public persons participate in financial markets and in vital components of the financial infrastructure. Governments borrow in markets, hedge risks, operate through markets to conduct monetary policy and maintain price stability, and own and operate payment and settlement systems. Accordingly, the term “financial system” encompasses both the monetary system with its official understandings, agreements, conventions and institutions, as well as the processes, institutions and conventions of private financial activities.⁴ Any analysis of how the financial system works and how well it is performing its key functions requires an understanding of these components.

What is meant by the term “financial stability”?

There is as yet no widespread agreement on a useful working definition of financial stability. Some authors prefer to define financial *instability* rather than stability⁵, while others prefer to define the problem in terms of managing systemic risk rather than as maintaining or safeguarding financial stability. Consistent with some aspects of these alternative definitions, Schinasi (2004b) proposes and analyses a definition of financial stability that has three important characteristics. First, the financial system efficiently and smoothly facilitates the intertemporal allocation of resources from savers to investors and the allocation of economic resources generally. Second, forward-looking financial risks are

being assessed and priced reasonably accurately and are also relatively well managed. Third, the financial system is in such a condition that it can comfortably if not smoothly absorb financial and real economic surprises and shocks. If any one or a combination of these characteristics is not being maintained, then it is likely that the financial system is moving in the direction of becoming less stable, and at some point might exhibit instability. For example, inefficiencies in the allocation of capital or shortcomings in the pricing of risk can, by laying the foundations for imbalances and vulnerabilities, compromise future financial system stability.

All three of these aspects of the definition can and do entail both endogenous and exogenous elements. For example, surprises that can impinge on financial stability can emanate both from within and outside the financial system. Moreover, the intertemporal and forward-looking aspects of this particular way of defining financial stability serve to emphasise that threats to financial stability arise not only from shocks or surprises but also from the possibility of disorderly adjustments of imbalances that have built up endogenously over a period of time – because, for example, expectations of future returns were misperceived and therefore mispriced.⁶

3 On the role of the legal system see, for example, R. Levine (1999), “Law, Finance and Economic Growth”, *Journal of Financial Intermediation*, 8, pp. 8-35; M. Leahy, S. Schich, G. Wehinger, F. Pelgrin and T. Thorgeirsson (2001), “Contributions of Financial Systems to Growth in OECD Countries”, OECD Working Paper, No 280, and T. Beck, A. Demirgüç-Kunt and R. Levine (2003), “Bank Concentration and Crises”, NBER Working Paper, No 9921.

4 This particular formulation is an adaptation of “international financial system” in E. Truman (2003), “Inflation Targeting in the World Economy”, Institute for International Economics, Washington.

5 See, for example, the survey of definitions of financial stability in Schinasi (2004b) or Houben, Kakes, and Schinasi (2004). A typology of instability is developed in E. P. Davis (2002), “A Typology of Financial Instability”, Financial Stability Report, 2, Oesterreichische Nationalbank.

6 That financial stability should not be thought of simply as a static concept of shock absorption capacity has been emphasised, among others, in H. M. Minsky (1982), *Inflation, Recession and Economic Policy* (Wheatsheaf, Sussex: MIT Press), and in C. P. Kindleberger (1996), *Manias, Panics and Crashes* (Cambridge: Cambridge University Press).

There are several important implications of defining financial stability in this way. First, judgements about the performance of the financial system entail how well the financial system is facilitating economic resource allocation, the savings and investment process, and ultimately economic growth. There are two-way linkages: the real economy can be positively or negatively affected by the financial system, and the performance of the financial system can be affected by the performance of the real economy. A framework that can assess financial stability must pay attention to these linkages.

Disturbances in financial markets or at individual financial institutions need not be considered threats to financial stability if they are not expected to impair overall economic activity. In fact, the incidental closing of a (minor) financial institution, a rise in asset price volatility, and sharp and even turbulent corrections in financial markets may be the result of competitive forces, the efficient incorporation of new information, and the economic system's self-correcting and self-disciplining mechanisms. By implication, in the absence of contagion and the high likelihood of systemic effects, such developments may be viewed as welcome – if not healthy – from a financial stability perspective. Just as in Schumpeterian business cycles, where the adoption of new technologies and recessions have both constructive and destructive implications, a certain amount of instability can be tolerated from time to time because it may encourage long-term financial system efficiency.⁷

Second, financial stability is a broad concept, encompassing the different aspects of the financial system, namely infrastructure, institutions and markets. Because of the interlinkages between these components, expectations of disturbances in any one component can affect overall stability, requiring a systemic perspective. Consistent with the definition of the financial system, at any given time stability or instability could be

the result of either private institutions and actions, or official institutions and actions, or both simultaneously and/or iteratively.

Third, financial stability not only implies that the financial system adequately fulfils its role in allocating resources, transforming and managing risks, mobilising savings and facilitating wealth accumulation and growth, but also that within this system the flow of payments throughout the economy functions smoothly (across official and private, retail and wholesale, and formal and informal payment mechanisms). This requires that money – both central bank money and its close substitute, derivative monies (such as demand deposits and other bank accounts) – adequately fulfils its role as a means of payment and a unit of account and, when appropriate, as a (short-term) store of value. In other words, financial stability and what is usually regarded as a vital part of monetary stability overlap to a large extent.⁸

Fourth, financial stability requires the absence of financial crises and the ability of the financial system to limit and deal with the emergence of imbalances before they constitute a threat to stability. In a well-functioning and stable financial system, this occurs in part through self-corrective, market-disciplining mechanisms that create resilience and endogenously prevent problems from festering and growing into system-wide risks. In this respect, there may be a policy choice between allowing market mechanisms to work to resolve potential difficulties and intervening quickly and effectively – through liquidity injections via markets, for example – to restore

⁷ See J. Schumpeter (1934), *The Theory of Economic Development* (Cambridge, MA: Harvard University Press).

⁸ For discussions of the role of central banks in financial stability see T. Padoa-Schioppa (2003), "Central Banks and Financial Stability: Exploring a Land in between", in V. Gaspar, P. Hartmann and O. Sleijpen (eds), *The Transformation of the European Financial System* (Frankfurt: ECB), and Schinasi (2003). On the interplay between monetary and financial stability see, for instance, O. Issing (2003), "Monetary and Financial Stability - Is There a Trade-off?", speech delivered at the Conference on Monetary Stability, Financial Stability and the Business Cycle, BIS, Basel, 28-29 March.

risk-taking and/or to restore stability. Thus, financial stability entails both preventive and remedial dimensions.

Last, but not least important, financial stability can be thought of as occurring along a continuum, reflecting different possible combinations of conditions of the financial system's constituent parts. One implication of seeing financial stability in this way is that maintaining financial stability does not necessarily require that each part of the financial system operates persistently at peak performance; it is enough for the financial system to operate on a "spare tyre" from time to time.⁹

The concept of a continuum is relevant because finance fundamentally involves uncertainty, is dynamic (i.e. it is both intertemporal and innovative), and is composed of many interlinked and evolutionary elements (e.g. infrastructure, institutions, markets, etc.). Accordingly, financial stability is expectations-based, dynamic, and dependent on many parts of the system working reasonably well. What might represent stability at one point in time might be more stable or less stable on another occasion, depending on other aspects of the economic system, such as technological, political, and social developments. Moreover, financial stability can be seen as being consistent with various combinations of the conditions of its constituent parts, such as the soundness of financial institutions, financial market conditions, and the effectiveness of the various components of the financial infrastructure.

What is meant by systemic risk? According to the G10 Report on financial consolidation and risk,

"Systemic financial risk is the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on

*the real economy. Systemic risk events can be sudden and unexpected, or the likelihood of their occurrence can build up through time in the absence of appropriate policy responses. The adverse real economic effects from systemic problems are generally seen as arising from disruptions to the payment system, to credit flows, and from the destruction of asset values."*¹⁰

The G10 study notes that this definition encompasses much of what is in the literature, but is stricter in two respects. One is that the negative externalities of a systemic event extend into the real economy, and are not confined to the financial system. The second is that this extension into the real economy occurs with a relatively high probability. The emphasis on real effects reflects the view that it is the output of real goods and services and the accompanying employment implications that are the primary concern of economic policymakers. "In this definition, a financial disruption that does not have a high probability of causing a significant disruption of real economic activity is not a systemic risk event."

Taken together, a good understanding of what is meant by financial stability and what is meant by financial instability can serve to define boundaries around the scope of the analysis. The safeguarding of financial stability should not be understood as a zero tolerance of bank failures or of an avoidance of market volatility, but it should avoid financial disruptions that lead to real economic costs.¹¹

9 See A. Greenspan (1999), "Do Efficient Markets Mitigate Financial Crises?", speech delivered before the 1999 Financial Markets Conference of the Federal Reserve Bank of Atlanta.

10 See G10 (2001), "Consolidation of the Financial Sector", Basel.

11 Papers that focus on aspects of systemic risk include O. De Bandt and P. Hartmann (2000), "Systemic Risk: A Survey", ECB Working Paper, No 35; D. Hoelscher and M. Quintyn (2003), "Managing Systemic Banking Crises", IMF Occasional Paper, No 224, and M. Summer (2003), "Banking Regulation and Systemic Risk", *Open Economies Review*, 14, pp. 43-70.

ASSESSING FINANCIAL STABILITY

With working definitions of the financial system, financial stability and systemic risk in hand, it is now possible to discuss the key role of financial stability assessments in safeguarding financial stability. The core objectives of a framework for safeguarding financial stability are the *prevention* and *resolution* of systemic financial problems. That is, safeguarding financial stability fundamentally requires a framework to *prevent* problems from occurring and/or to *resolve* problems if prevention fails.

A key to prevention is the early identification of risks to stability and of potential sources of vulnerability in the financial system before they lead to unsustainable and potentially damaging imbalances and consequences. For example, weaknesses and vulnerabilities could exist in any of the components of the financial system – institutions, markets, infrastructure – and could entail all three simultaneously. Along with identifying potential sources of risks and vulnerabilities, it is also desirable to attempt to calibrate their intensity and potential for (or probability of) leading to financial system problems and possible systemic effects. Accordingly, financial stability assessments are a key part of prevention.

The key to resolution is to have mechanisms in place and policy tools available to remedy situations in which the financial system seems to be in the early stages of moving towards instability. Such tools would include moral suasion and intensified supervision and/or market surveillance, for example. Should remedial measures fail, or undetected endogenous factors or unanticipated exogenous factors lead to instability, tools should be available for resolving problems and instabilities quickly and with minimum collateral damage, either to the financial system or the economy. Such tools would include emergency liquidity assistance.

Figure A.1 Framework for maintaining financial system stability

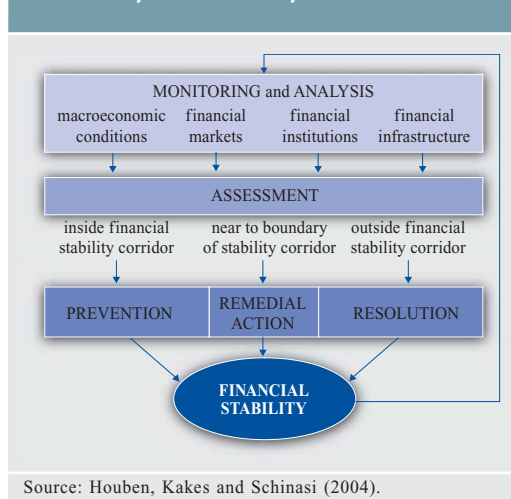


Figure A.1 presents a schematic diagram that might be considered as a reasonable model of such a framework for prevention and resolution.

In order to prevent problems from occurring or becoming significant enough to pose a risk to financial stability, it would be desirable if the approach taken were to entail a continuous process of information gathering, technical analysis, monitoring and assessment. Because of the linkages between the real economy and the financial system, and also the various components of the financial system, this continuous process would be most useful if it encompassed both economic and financial dimensions, as well as institutional knowledge about institutions, markets and the financial infrastructure. In effect, the process needs to be comprehensive and analytical (see the top bar in Figure A.1). It should be noted that ongoing and more fundamental research into the changing structure of the financial system and its changing linkages to the real economy, as well as the further development of measurement techniques for detecting growing imbalances and calibrating risks and vulnerabilities, are vital for keeping this important monitoring phase up to date.

The process entails gathering information about, and monitoring, conditions in the macroeconomy (and at times microeconomic aspects as well) and the various aspects of the financial system through supervisory, regulatory and surveillance mechanisms. Each of the financial system monitoring components could entail both macro and micro-prudential characteristics.

For example, when it comes to gathering information about financial stability risks in the banking system, the supervisory process could be aided by knowledge about where the economy is with regard to the business and credit cycles and how markets have been performing overall: the reason being that the macroeconomy and markets provide the background against which the operational performance of the banking system should be assessed. Likewise, an assessment of the condition of financial markets could differ depending on whether the major institutions operating in the markets are well capitalised and profitable or not.

The reason for gathering information, analysing it, and continuously monitoring the various components of, and influences on, the financial system is to make systematic and periodical assessments of whether the financial system is more or less performing its main functions well enough to be judged to be within a corridor of financial stability along the continuum discussed earlier. Such an assessment could lead to three conclusions, each of them with quite different implications for action (see the middle bar in Figure A.1 labelled *assessment*, plus the arrows). The financial system can be judged as either being in a zone or corridor of financial stability, as approaching a boundary of stability/instability, or as being outside a zone or corridor of stability. Within the third category, the financial system could be further judged to be in a position in which self-correcting processes and mechanisms are assessed as being likely to move the system back toward the corridor of stability or alternatively to need prompt

remedial and even emergency measures to reverse the instability.¹²

Financial conditions and potential difficulties could also be delineated according to their intensity, scope and potential threat to systemic stability. For example, potential financial difficulties can be thought of as falling into one of the following fairly broad categories:

- difficulties in a single institution or market not likely to have system-wide consequences for either the banking or financial system;
- difficulties that involve several relatively important institutions involved in market activities with some non-trivial probability of spillovers and contagion to other institutions and markets; and
- problems likely to spread to a significant number and types of financial institutions and across usually unrelated markets for managing liquidity needs, such as forward, interbank and even equity markets.

Problems occurring within each of these categories would require different diagnostic tools and policy responses, ranging from taking no action to intensifying supervision or surveillance of a specific institution or market, to liquidity injections into the markets to dissipate strains, or to interventions into particular institutions.

CONCLUDING REMARKS

Taken together, a good understanding of what is meant by financial stability and financial instability can serve to define boundaries around the scope of monitoring and assessing financial stability. Financial stability is complex to define and should not only be seen from the perspective of avoiding financial crises. Financial stability

¹² As Kindleberger (1996) puts it, “markets work well, on the whole, and can normally be relied upon to decide the allocation of resources and, within limits, the distribution of income, but [...] occasionally markets will be overwhelmed and need help”.

also has a positive dimension. It is a condition where the financial system is capable of performing all of its normal tasks well and where it is expected to do so for the foreseeable future. From this viewpoint, financial system stability requires that the principal components of the system – including financial institutions, markets and infrastructures – are jointly capable of absorbing adverse disturbances. It also requires that the financial system facilitates a smooth and efficient reallocation of financial resources from savers to investors, that financial risk is assessed and priced accurately, and that risks are efficiently managed. In addition, financial stability has an important forward-looking dimension: inefficiencies in the reallocation of capital or shortcomings in the pricing of risk can, by laying the foundations for future vulnerabilities, compromise future financial system stability, and therefore economic stability. While this definition suggests that financial stability analysis is wide in scope, a definition of systemic risk can help in narrowing it down by focusing monitoring and assessment activities on the risks of financial disruptions that have a high probability of impairing real economic activity.