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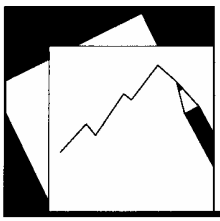

IMF Working Paper

Defining Financial Stability

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IMF Working Paper

International Capital Markets Department

Defining Financial Stability[1]

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Abstract

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The main objective of this paper is to propose a definition of financial stability that has some practical and operational relevance. Financial stability is defined in terms of its ability to facilitate and enhance economic processes, manage risks, and absorb shocks. Moreover, financial stability is considered a continuum: changeable over time and consistent with multiple combinations of the constituent elements of finance. The paper also discusses several practical implications of the definition that should be considered when using it for policy analysis or developing an analytical framework.

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I. INTRODUCTION

Does financial stability require the soundness of institutions, the stability of markets, the absence of turbulence, low volatility, or something more fundamental? Can it be achieved and maintained through individual private actions and unfettered market forces alone? If not, what is the role of the public sector in fostering financial stability, as opposed to private-collective action: is it just to make way for the private sector to achieve an optimum on its own, or is a more proactive role necessary for achieving the full private and social benefits of finance? Is there a consensus on how to achieve and maintain financial stability?

The last three questions are not likely to have clear answers without a useful answer to the first question. Likewise, without a good working definition, the growing financial stability profession will continue to find it difficult to develop useful analytical frameworks for examining policy issues. Unfortunately, there is no single, widely accepted and used definition of financial stability. There have been recent attempts to define financial stability, but most of them seem to fit into a particular theme of a paper or speech. In addition, most authors prefer to define financial instability or systemic risk (see the attached Annex starting on page 13).

The approach taken here is to define financial stability rather than its absence, in part because this is likely to be the more useful "policy" objective. A policy objective of avoiding financial instability or crisis—or of managing systemic risk—could bias policy decisions, analyses, and analytical frameworks towards sacrificing both private and social benefits of finance. A more positive or constructive approach—such as the one proposed in this paper—may serve additional practical purposes, including leaving open the possibility of assessing whether the private and social benefits of finance can be increased further. This would be particularly useful in countries that have relatively undeveloped financial systems.

As anyone who has tried to define financial stability knows, there is as yet no widely accepted model or analytical framework for assessing financial system stability and for examining policies as there is for economic systems and in other disciplines.[2] This is because the analysis of financial stability is still in its infant stage of development and practice, as compared with—for example—the analysis of monetary and/or macroeconomic stability. In the rare cases in which financial systems are expressed rigorously, they constitute one or two equations in a much larger macroeconomic model possessing most of the usual macro-equilibrium and macro-stability conditions. In addition, there are reasons to believe that a single target variable **cannot** be found for defining and achieving financial stability—as there is believed to be for defining and achieving monetary stability—although many doubt that a single target variable approach accurately represents actual practice in monetary policymaking.

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[2] See the paper by Houben, Kakes, and Schinasi (2004), which proposes a framework for financial stability (and also draws on concepts developed here). The IMF's bilateral and multilateral financial market and system surveillance, and the IMF's and World Bank's Financial Sector Assessment Program are also making progress in this direction.

Lacking a framework, a set of models, or even a concept of equilibrium, it is difficult to envision a definition of financial stability akin to that which economists normally demand and use. Nevertheless, it would be useful to have one that allows for the development of policy frameworks and analytical tools. The definition proposed in this paper is one step in this direction, and is offered for wider debate.

The paper is organized as follows: Section II briefly presents some prior concepts of finance and its strengths (benefits) and weaknesses (fragilities), drawing on analysis in a companion study. These concepts serve as both practical and analytical focal points for developing a concept of financial stability in the absence of a widely accepted concept of equilibrium and analytical framework. For simplicity, Section III identifies five principles that a useful definition could encompass. It also makes a case for seeing financial stability as occurring along a changeable continuum or range of conditions of the constituent parts of the financial system, as opposed to a single configuration or state of these parts as is most often used in microeconomic and macroeconomic models. Section IV proposes a broad definition and discusses the meaning of some of its language. The final section identifies several practical implications of the definition that should be carried over into any policy or analytical framework that utilizes it.

II. Prior Concepts of Finance and Finance's Strengths and Weaknesses

Before developing a working definition of financial stability, it would be useful to consider the following understandings as prerequisites or as relevant concepts and ideas.[3]

First, a barter economy is less effective and efficient in allocating scarce resources than is an economy with the ability to use financial claims on future real resources. A discussion of financial stability must necessarily take place within the context of a monetary economy in which there exists a money (now usually fiat money) that is universally accepted as the economy's unit of account and means of payment.

Second, money is not necessarily the most desirable store of value—except in the very short run or during episodes of financial distress and dysfunctions. Throughout recorded history, human ingenuity has driven an evolutionary **process** of finance to overcome this persistent deficiency. Modern finance provides substitutes for money that provide temporary and reversible intertemporal means-of-payment and store-of-value services. These substitutes are promises to pay money in the future and are designed in part to facilitate intertemporal resource allocations.

Third, many of the services provided by money and finance are both private and public goods. They are private goods in providing benefits to individuals in their private affairs, benefits that convey only to the counterparts engaged in specific transactions. They separately and jointly provide public goods as well, because they allow multilateral trade and exchange to be more efficient, in part by eliminating the need for Jevons' "double coincidence of wants," both sectorally at moments in time and intertemporally. In addition,

[3] See Schinasi (2004) for a more detailed discussion and analysis of many of these points.

finance provides public goods beyond those of fiat money: by enhancing and distributing the public-good characteristics of fiat money, finance enlarges society's opportunities for—and efficiency in—intertemporal economic processes such as trade, production, wealth accumulation, economic development and growth, and ultimately social prosperity. In sum, the universal acceptability of money and the existence of an effective process of finance together create an environment that provides collective benefits to all members of society.

Fourth, an alternative and useful way of seeing finance is to bring to the surface one of its defining characteristics. Unlike fiat money—which eliminates the element of human trust in trade and exchange—finance involves human **promises** to pay back specific amounts of fiat money in the future. In this way, finance existentially embodies uncertainty (about human trust). Modern financial systems have evolved to provide beneficial and necessarily imperfect ways of transforming this fundamental uncertainty into quantifiable and "priceable" risks, such as default risk, and, through social arrangements (both markets and financial institutions), also market risk, liquidity risk, and so on. In less traditional but no less appropriate terms, modern finance provides societies with effective, albeit imperfect, mechanisms for transforming, pricing, and allocating **economic and financial uncertainties and risks**.

Finally, because finance existentially embodies uncertainty, there are both potential benefits and costs associated with it.[4] On the one hand, finance enhances the private and social benefits of fiat money: in part by enlarging the pool of liquidity available for production, consumption, and exchange; and in part by facilitating and enhancing the efficiency of intertemporal economic processes. In effect, the willingness to engage in finance (i.e., to take the leap of faith) and accept the uncertainty of trust has created social welfare gains far beyond what fiat money alone could provide.

On the other hand, trust is fragile: it can, and often enough does, become a source of potential financial instability, which in the wrong circumstances can affect both individual and social welfare. To the extent that **doubts** about human trust are transformed by the financial system into market and other financial risks, they too can become companion sources of instability—even more so if a society's financial-market mechanisms are impaired and unable to effectively reallocate and price such doubts. How such doubts **propagate** through the financial system is an important determinant of whether they either self-correct and remain isolated and harmless or become widespread, harmful, and perhaps even systemic. Because finance supports and facilitates real economic processes, these potential instabilities may well extend to the real economy.

[4] Diamond and Dybvig (1983) and Diamond and Rajan (2000) explore this in the context of bank intermediation.

III. Key Principles for Defining Financial Stability

While there is scope for being more comprehensive and inclusive, a small number of key principles can be identified for developing a working definition of financial stability.[5] One that requires more elaboration than the others is that it is useful to consider financial stability as occurring along a continuum—rather than as a static condition.

The first principle is that financial stability is a broad concept, encompassing the different aspects of finance (and the financial system)—infrastructure, institutions, and markets. Both private and public persons participate in markets and in vital components of the financial infrastructure (including the legal system and official frameworks for financial regulation, supervision, and surveillance). Governments borrow in markets, hedge risks, operate through markets to conduct monetary policy and maintain monetary stability, and own and operate payments and settlement systems. Accordingly, the term "financial system" can be seen as encompassing both the monetary system with its official understandings, agreements, conventions, and institutions as well as the processes, institutions, and conventions of private financial activities.[6] Given the tight interlinkages between all of these components of the financial system, (expectations of) disturbances in any of the individual components can undermine the overall stability, requiring a systemic perspective. 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.

A second useful principle is that financial stability not only implies that finance adequately fulfills its role in allocating resources and risks, mobilizing savings, and facilitating wealth accumulation, development, and growth; it should also imply that the systems of payment throughout the economy function smoothly (across official and private, retail and wholesale, and formal and informal payments mechanisms). This requires that fiat (or central bank) money—and its close-substitute, derivative monies (such as demand deposits and other bank accounts)—can adequately fulfill its role as the universally accepted means of payment and 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.

A third principle is that the concept of financial stability relates not only to the absence of actual financial crises but also to the ability of the financial system to limit, contain, and deal with the emergence of imbalances before they constitute a threat to itself or economic processes. In a well-functioning and stable financial system, this occurs in part through self-corrective, market-disciplining mechanisms that create resilience and prevent

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[5] There are also many prerequisites for establishing a sound and stable financial system, such as: macroeconomic stability and a policy framework for maintaining it; an adequate—if not effective—framework for financial regulation, supervision, and surveillance (implicitly mentioned in the text as infrastructure; well-established codes, standards, and business practices), and more generally private incentive structures; and an enforceable legal system that supports productive private financial contracts.

[6] This is adapted from the definition of "international financial system" in Truman (2003).

problems from festering and growing into system-wide risks. In this respect, there may be a policy-related trade-off entailing the 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 risk-taking and/or to restore stability. Thus, financial stability entails both preventive and remedial dimensions.

A fourth important principle is that financial stability be couched in terms of the potential consequences for the real economy. Disturbances in financial markets or at individual financial institutions need not be considered threats to financial stability if they are not expected to damage economic activity at large. In fact, the incidental closing of a 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.

A fifth principle—consistent with those already discussed and the actual dynamism of finance—is that financial stability be thought of as occurring along a continuum. An example that is more transparent is the **health** of an organism, which also occurs along a continuum. A healthy organism can usually reach for a greater level of health and well being, and the range of what is normal is broad and multi-dimensional. In addition, not all states of un-health (or illness) are significant, systemic, or life threatening. And some illnesses, even temporarily serious ones, allow the organism to continue to function productively and can have a cleansing effect, leading to greater health. 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 operate persistently at peak performance; it is consistent with the financial system operating on a "spare tire" from time to time.[7]

The concept of a continuum is relevant because finance fundamentally involves uncertainty, is dynamic (meaning both inter-temporal and innovative), and is composed of many interlinked and evolutionary elements (infrastructure, institutions, markets). 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 at some other time, depending on other aspects of the economic system—such as technological, political, and social developments. Moreover, financial stability can been seen as being consistent with various combinations of the conditions of its constituent parts, such as the soundness of financial institutions, financial markets conditions, and effectiveness of the various components of the financial infrastructure.

[7] See Greenspan (1999).

IV. Definition of Financial System Stability

Broadly, financial stability can be thought of in terms of the financial system's ability: (a) to facilitate both an efficient allocation of economic resources—both spatially and especially intertemporally—and the effectiveness of other economic processes (such as wealth accumulation, economic growth, and ultimately social prosperity); (b) to assess, price, allocate, and manage financial risks; and (c) to maintain its ability to perform these key functions—even when affected by external shocks or by a build up of imbalances—primarily through self-corrective mechanisms.

A definition consistent with this broad view is as follows:

> *A financial system is in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy, and of dissipating financial imbalances that arise endogenously or as a result of significant adverse and unanticipated events*.

The meanings of several phrases need to be explained.

First, the concept of **a range of stability** represents the concept of a continuum as a key building block. The continuum for financial stability can be thought of as multidimensional and occurring across a multitude of observable and measurable variables. The set of variables should encompass a subset that tries to quantify, albeit imperfectly, how well finance is facilitating economic and financial processes such as savings and investment, lending and borrowing, liquidity creation and distribution, asset pricing, and ultimately wealth accumulation and growth.

As a continuum, financial stability can be seen practically as somewhat broader and less precise than the ability to return to a single and sustainable position or time path after a shock or perturbation, as with other (Newtonian) concepts of equilibrium and stability in some disciplines (including economics). The proposed definition is consistent with a financial system being in a perpetual state of flux and transformation while its ability to perform its key functions remains well within a set of tolerable boundaries—defined over a set of measurable variables—that are consistent with it successfully playing its important facilitative and efficiency-enhancing roles. Observable states approaching these boundaries would indicate that the financial system is losing some of its ability to perform; observations outside these boundaries would indicate that the system is no longer effectively facilitating economic processes, perhaps because aggregate production is substantially below its potential on account of funds not being channeled to profitable activities, risks not being managed, and shocks not being absorbed. In such cases, remedial action would be required, which in the extreme would mean crisis resolution and restoration.

To illustrate the multidimensional nature of the definition, consider a very simplistic two-dimensional example. In assessing the joint stability of financial markets and financial institutions, one might be able to identify combinations of interest rate spread volatility (as a possible market source of instability) and banking system capital (as an institutional source of shock-absorptive capacity) that are consistent with the financial system continuing

effectively to facilitate efficient resource allocation. Likewise, other combinations could be identified that would not be consistent with stability. The former would constitute the range of stability and the latter would fall outside this range.

A more comprehensive sets of factors could be envisioned for determining a grid over which a continuum is defined. Statistical tools could be utilized to select such factors by considering historical episodes of both stability and instability, in part by using forward-looking, market-determined expectations of future outcomes and matching them with actual outcomes. This methodology could, in principle, also help to establish estimates of boundaries or zones separating stability from potential instability.[8]

A second phrase that needs some explanation is **facilitating (rather than impeding) the performance of an economy**. This phrase means, among other things, that finance is contributing to (rather than impeding) the efficient allocation of real resources, the rate of growth of output, and the processes of saving, investment, and wealth creation—and may also entail and include other observable and measurable aspects of economic performance.

Third, the term, "dissipate financial imbalances," means a movement along the continuum in the direction of stability (away from boundaries) and not instability, for example in asset prices and portfolio flows, implicitly through self-corrective mechanisms. Such adjustments would include the exit and entry of market participants (financial institutions or nonfinancial entities acting on behalf of others or individuals acting directly in the markets).

There are other aspects of the definition worth noting. The proposed definition leaves open the possibility that the financial system could become capable of impeding the performance of the economy **endogenously**, even in the absence of unanticipated events (shocks), for example through the accumulation of imbalances caused by asset mispricing and/or other market "imperfections." This is consistent with the ample historical evidence that financial systems, particularly banking systems, are prone to the build up of imbalances (credit-risk concentrations or illiquidity, for example) and even instability. Banks internalize the fragilities associated with the properties of liquidity, and are therefore prone to instability themselves.[9] Banks, other financial institutions, and even markets can be seen as social arrangements—or as clearing houses—for assessing, pricing, and trading human promises necessarily involving uncertainty and risk, including uncertainty about the fundamental element of trust in financial contracts. Social arrangements and institutional features of economic systems try to internalize the potential adverse consequences of negative externalities associated with the frailties of human trust. A tangible example of this is that banks internalize the potential adverse consequences of failures of trust by economizing on

[8] In principle, this approach could be generalized and made amenable to theoretical and empirical model building. For example, one could define a set of *n* variables that encompass all relevant measures of aspects of financial stability. The range of stability could be defined as a subset of *n-tuples* bounded by *n functions* (most likely nonlinear) defining the limits of stability in terms of *n variables*.

[9] See Diamond and Rajan (2000 and 2002).

information about large pools of debtors and their ability to pay future claims or promissory notes. In internalizing these elements of financial risk and uncertainty, financial institutions and markets themselves embody the potential for financial fragility, which ultimately finds its source in a failure of human trust in some meaningful way (for example, a default).

The definition also presupposes that there are aspects of finance that embody either negative or positive externalities. In this sense, improvements in the ability of finance to facilitate rather than impede economic processes—including providing greater financial stability—is welfare improving in terms of enhancing the efficiency of resource allocation (and pricing), especially inter-temporally.[10] Some points along the continuum of financial stability are more welfare-improving (and efficiency-enhancing) than others, and some points along the continuum of instability are to be avoided, seemingly at all costs.[11] Thus, in moving from a condition of stability to instability, the contribution of the financial system to aggregate economic welfare is being reduced.

A stable financial system is one that enhances economic performance in many dimensions, whereas an unstable financial system is one that detracts from economic performance. In this sense the definition is "normative." Ultimately—and unlike physical instabilities such as earthquakes, floods, and sunspots—financial instability can be dealt with through massive intervention by authorities, including redefining the rules of the market place. But these measures would be "last resort" reforms to prevent the economic system from collapsing—as, for example, during the world-wide depression in the 1930s and more recently in Asia during 1997–98.

To illustrate the broad nature of this definition of financial stability, two corollary definitions are useful:

> *(i) A financial system **is entering a range of instability** whenever it is threatening to impede the performance of an economy.*
>
> *(ii) A financial system **is in a range of instability** when it is impeding performance and threatening to continue to do so.*

A more general definition that does not require the specification of what constitutes a "financial system" is:

> *Financial stability is a condition in which an economy's mechanisms for pricing, allocating, and managing financial risks (credit, liquidity, counterparty, market, etc.) are functioning well enough to contribute to the performance of the economy (as defined above).*

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[10] See Schinasi (2004).

[11] There would seem to be a trade-off in financial systems between financial stability and efficiency, but this is difficult to analyze given that there are different concepts of both stability and efficiency. There is some work on this in the theoretical banking literature, but none could be found at the financial-system level.

V. Some Practical Implications of the Definition

Looking at financial stability in this way allows for the delineation of financial conditions and potential difficulties according to their intensity, scope, and potential threat to systemic stability. One could, for example, think of potential financial difficulties 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 nontrivial 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 doing nothing to intensifying supervision or surveillance of a specific institution or market, to liquidity injections into the markets to dissipate strains, to interventions into particular institutions.

The financial stability definition also involves several complexities that have practical significance in terms of assessing risks to the well-functioning of the financial system and the contribution public policy can make to ensuring financial stability.

- **Developments in financial stability cannot be summarized in a single quantitative indicator**. In contrast with price stability, for instance, there is as yet no unequivocal unit of measurement for financial stability.[12] This reflects the multifaceted nature of financial stability as it relates to both the stability and resilience of financial institutions, and to the smooth functioning of financial markets and settlement systems. Moreover, diverse factors need to be weighed in terms of their potential ultimate influence on real economic activity.

- **Developments in financial stability are inherently difficult to forecast**. Assessing the state of financial stability should not only take stock of disturbances as they emerge, but also indicate the risks and vulnerabilities that could lead to such disturbances occurring in the future. A forward-looking approach is therefore needed in order to establish the build-up of risks and imbalances and to take account of the transmission lags in policy instruments. The challenge is that financial crises are inherently difficult to predict because of many factors, for example, contagion effects and nonlinearities in the relationships between the constituent parts of finance. In

[12] See Andy Haldane (2004) for an attempt to set out how this might be done for financial stability.

addition, risks to financial stability often reflect the far-reaching consequences of unlikely events. This implies that the focus of attention should not be the mean, median, or mode of possible outcomes or states but the entire distribution of them, and particularly the left "tail." Beyond this, the distribution of possible outcomes may be subject to greater fundamental uncertainty (in the sense of Knight, 1921) than traditional macroeconomic projections, reflecting lack of knowledge about the actual shape of the probability distribution. This would imply that forecasts of financial stability might be inherently less reliable than forecasts of monetary or macroeconomic stability, for which there are well-worked and more reliable models and more timely and useful data. Thus, in the large sets of financial indicators that are now being used by central banks and international financial institutions, the relationships between indicators and financial stability conditions may not be strong or robust enough to be reliable for assessments and prediction. Nevertheless, in looking at a broader array of indicators, in developing better frameworks, and in utilizing sophisticated statistical tools, there may be scope for improving the ability to monitor and assess financial stability in the future.

- **Developments in financial stability are only partly controllable**. The policy instruments that can be used to safeguard financial stability generally have other primary objectives, such as protecting the interests of deposit holders (in the case of prudential instruments), fostering price stability (in the case of monetary policy), or promoting a swift settlement of financial transactions (in the case of policies governing payment and settlement systems). Besides timing lags, the impact of these policy instruments on financial stability is thus often indirect; in some cases there may even be friction with the instrument's initial objective. Moreover, developments in financial stability are highly susceptible to exogenous shocks—ranging from natural catastrophes to abrupt swings in market sentiment—further limiting their controllability.

- **Policies aimed at financial stability often involve a trade-off between resilience and efficiency**. Measures to enhance financial stability often involve weighing the pursuit of an efficient allocation of financial resources against the ability to exclude or absorb shocks to the financial system. This implies a risk/return judgment that is difficult to make in a fully objective manner. For instance, in the sphere of prudential policies, higher solvency requirements will reduce the risk of a bank not being able to absorb an adverse shock but will also imply capital costs and foregone investment opportunities. Similarly, exchange restrictions may reduce or exclude certain risks related to international capital flows but may also limit the efficiency of the domestic financial market.

- **Policy requirements for financial stability may be time inconsistent**. Since the use of some public policy instruments to safeguard financial stability circumvents market forces, the short-term stability gain may come at the cost of a longer-term stability loss. In particular, measures such as the provision of lender-of-last-resort finance or deposit guarantee may undermine market discipline, thereby creating moral hazard or adverse selection. This intertemporal trade off is a fundamental issue in financial system policymaking.

ALTERNATIVE DEFINITIONS OF FINANCIAL STABILITY

This appendix provides an overview of definitions or descriptions of financial stability by a selected group of officials, central banks, and academics.[13]

John Chant and others (Bank of Canada)[14]

"Financial instability refers to conditions in financial markets that harm, or threaten to harm, an economy's performance through their impact on the working of the financial system.... Such instability harms the working of the economy in various ways. It can impair the financial condition of non-financial units such as households, enterprises, and governments to the degree that the flow of finance to them becomes restricted. It can also disrupt the operations of particular financial institutions and markets so that they are less able to continue financing the rest of the economy.... It differs from time to time and from place to place according to its initiating impulse, the parts of the financial system affected, and its consequences. Threats to financial stability have come from such diverse sources as the default on the bonds of a distant government; the insolvency of a small, specialized, foreign exchange bank; computer breakdown at a major bank; and the lending activities of a little-known bank in the U.S. Midwest (pp. 3–4).

Andrew Crockett (Bank for International Settlements and Financial Stability Forum)[15]

"...define financial stability as an absence of instability...a situation in which economic performance is potentially impaired by fluctuations in the price of financial assets or by an inability of financial institutions to meet their contractual obligations. I would like to focus on four aspects of this definition.

"Firstly, there should be real economic costs.... Secondly, it is the potential for damage rather than actual damage which matters.... Thirdly, my definition refers...not just to banks but to nonbanks, and to markets as well as to institutions.... Fourth, my definition allows me to address the question of whether banks are special...all institutions that have large exposures—all institutions that are largely interconnected whether or not they are themselves directly involved in the payments system—have the capacity, if they fail, to cause much widespread damage in the system."

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[13] Some authors choose not to define financial stability and instead use the concept of systemic risk. See Oosterloo and Haan (2003) for a discussion of this concept.

[14] See Chant (2003).

[15] See Crockett (1997).

Deutsche Bundesbank[16]

"The term financial stability broadly describes a steady state in which the financial system efficiently performs its key economic functions, such as allocating resources and spreading risk as well as settling payments, and is able to do so even in the event of shocks, stress situations, and periods of profound structural change."

Wim Duisenberg (European Central Bank)[17]

"...monetary stability is defined as stability in the general level of prices, or as an absence of inflation or deflation. Financial stability does not have as easy or universally accepted a definition. Nevertheless, there seems to be a broad consensus that financial stability refers to the smooth functioning of the key elements that make up the financial system."

Roger Ferguson (Board of Governors of the U.S. Federal Reserve System)[18]

"It seems useful...to define financial stability...by defining its opposite: financial instability. In my view, the most useful concept of financial instability for central banks and other authorities involves some notion of market failure or externalities that can potentially impinge on real economic activity.

"Thus, for the purposes of this paper, I'll define financial instability as a situation characterized by these three basic criteria: (i) some important set of financial asset prices seem to have diverged sharply from fundamentals; and/or (ii) market functioning and credit availability, domestically and perhaps internationally, have been significantly distorted; with the result that (iii) aggregate spending deviates (or is likely to deviate) significantly, either above or below, from the economy's ability to produce.

Michael Foot (U.K. Financial Services Authority)[19]

"...we have financial stability where there is: (a) monetary stability; (b) employment levels close to the economy's natural rate; (c) confidence in the operation of the generality of key financial institutions and markets in the economy; and (d) where there are no relative price movements of either real or financial assets within the economy that will undermine (a) or (b).

"The first three elements of this definition are, I hope, noncontentious. In respect of (a) and (b), it seems implausible to define financial stability as occurring in a period of rapid inflation, or in a mid-1930s style period of low inflation but high unemployment.

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[16] Deutsche Bundesbank (2003).

[17] See Duisenberg (2001).

[18] See Ferguson (2003).

[19] See Foot (2003).

"Similarly in respect of (c), it would be strange to argue that there was financial stability in a period when banks were failing, or when normal conduits for long-term savings and borrowing in either the personal or corporate sectors were seriously malfunctioning. Such circumstances would mean the participants had lost confidence in financial intermediaries. It would mean, almost certainly, that economic growth was being damaged by the unavailability or relatively high cost of financial intermediation.

"This leaves us with (d).... I would say that there are four main channels by which changes in asset prices might affect the real economy: by changing household wealth and thereby consumption…by a change in equity prices...by their impact on firms' balance sheets which can then affect corporate spending...[and] by their impact on capital flows, with for example inflows of capital—as during the dot.com boom in the US—strengthening the domestic currency."

Sir Andrew Large[20]

"In a broad sense.....think of financial stability in terms of maintaining confidence in the financial system. Threats to that stability can come from shocks of one sort or another. These can spread through contagion, so that liquidity or the honoring of contracts becomes questioned. And symptoms of financial instability can include volatile and unpredictable changes in prices. Preventing this from happening is the real challenge."

Frederick Mishkin (Columbia University)[21]

...Financial instability "occurs when shocks to the financial system interfere with information flow so that the financial system can no longer do its job of channeling funds to those with productive investment opportunities."

Norges Bank[22]

"Financial stability means that the financial system is robust to disturbances in the economy, so that it is able to mediate financing, carry out payments, and redistribute risk in a satisfactory manner."

Tommaso Padoa-Schioppa (European Central Bank)[23]

"...[financial stability is] a condition where the financial system is able to withstand shocks without giving way to cumulative processes, which impair the allocation of savings to investment opportunities and the processing of payments in the economy.

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[20] See Large (2003).

[21] See Mishkin (1999).

[22] See Norwegian Central Bank (2003).

[23] See Padoa-Schioppa (2003).

"The definition immediately raises the related question of defining the financial system...[which] consists of all financial intermediaries, organized and informal markets, payments and settlement circuits, technical infrastructures supporting financial activity, legal and regulatory provisions, and supervisory agencies. This definition permits a complete view of the ways in which savings are channeled towards investment opportunities, information is disseminated and processed, risk is shared among economic agents, and payments are facilitated across the economy."

Anna Schwartz (National Bureau of Economic Research)[24]

"A financial crisis is fueled by fears that the means of payment will be unobtainable at any price and, in a fractional reserve banking system, leads to a scramble for high-powered money. It is precipitated by actions of the public that suddenly squeeze the reserves of the banking system.... The essence of a financial crisis is that it is short-lived, ending with a slackening of the public's demand for additional currency."

Nout Wellink (De Nederlandsche Bank)[25]

"According to our own definition at the Nederlandsche Bank, a stable financial system is capable of efficiently allocating resources and absorbing shocks, preventing these from having a disruptive effect on the real economy or on other financial systems. Also, the system itself should not be a source of shocks. Our definition thus implies that that money can properly carry out its functions as a means of payment and as a unit of account, while the financial system as a whole can adequately perform its role of mobilizing savings, diversifying risks, and allocating resources. Financial stability is a vital condition for economic growth, as most transactions in the real economy are settled through the financial system. The importance of financial stability is perhaps most visible in situations of financial instability. For example, banks may be reluctant to finance profitable projects, asset prices may deviate excessively from their underlying intrinsic values, or payments may not be settled in time. In extreme cases, financial instability may even lead to bank runs, hyperinflation, or a stock market crash."

[24] Schwartz (1986).

[25] See Wellink (2002).

References

Chant, John, 2003, "Financial Stability As a Policy Goal," in *Essays on Financial Stability*, by John Chant, Alexandra Lai, Mark Illing, and Fred Daniel, Bank of Canada Technical Report No. 95 (Ottawa: Bank of Canada), September, pp. 3–4.

Crockett, Andrew, 1997, "The Theory and Practice of Financial Stability*," GEI Newsletter Issue No. 6* (United Kingdom: Gonville and Caius College Cambridge), 11–12 July.

Davis, Philip, 2002, "A Typology of Financial Instability," Financial Stability Report 2 (Vienna: Österreichische Nationalbibliothek).

Deutsche Bundesbank (2003), "Report on the Stability of the German Financial System," *Monthly Report*, Frankfurt, December.

Diamond, Douglas W., and Raghuram G. Rajan, 2001, "Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking," *Journal of Political Economy*, Vol. 109, 2, pp. 287–327.

———— , 2001, "Banks, Short Term Debt, and Financial Crises: Theory, Policy Implications, and Applications," *Proceedings of Carnegie Rochester Series on Public Policy* (Amsterdam: Elsevier Science),Vol. 54, No. 1, pp. 37–71.

Duisenberg, Wim F., 2001, "The Contribution of the Euro to Financial Stability," in *Globalization of Financial Markets and Financial Stability—Challenges for Europe* (Baden-Baden: Nomos Verlagsgesellschaft), pp. 37–51.

Ferguson, Roger, 2002, "Should Financial Stability Be An Explicit Central Bank Objective?" (Washington: Federal Reserve Board).

Foot, Michael, 2003, "What Is 'Financial Stability' and How Do We Get It?" The Roy Bridge Memorial Lecture (United Kingdom: Financial Services Authority), April 3.

Greenspan, Alan, 1999, "Do Efficient Markets Mitigate Financial Crises?" speech delivered before the 1999 Financial Markets Conference of the Federal Reserve Bank of Atlanta.

Haldane, Andrew, 2004, "Defining Monetary and Financial Stability" (unpublished; London: Bank of England), February.

Houben, Aerdt C.F.J., Jan Kakes, and Garry Schinasi, 2004, "Toward a Framework for Safeguarding Financial Stability," IMF Working Paper 04/101 (Washington: International Monetary Fund) and DNB Occasional Paper (Amsterdam, Forthcoming).

Large, Sir Andrew, 2003, "Financial Stability: Maintaining Confidence in a Complex World," in *Financial Stability Review* (London: Bank of England), December, pp. 170–74.

Mishkin, Frederick, 1999, "Global Financial Instability: Framework, Events, Issues," *Journal of Economic Perspectives*, Vol. 13 (Fall), pp. 3–20.

Norwegian Central Bank, 2003, *Financial Stability Review*, February.

Padoa-Schioppa, Tomasso, 2003, "Central Banks and Financial Stability: Exploring the Land In Between," in *The Transformation of the European Financial System*, ed. by Vitor Gaspar and others (Frankfurt: European Central Bank), pp. 269–310.

Schinasi, Garry J., 2003, "Responsibility of Central Banks for Stability in Financial Markets," in *Current Developments in Monetary and Financial Law—Volume 2* (Washington: International Monetary Fund), Chapter 17.

——— , 2004, "Private Finance and Public Policy," IMF Working Paper 04/120 (Washington: International Monetary Fund).

Schwartz, Anna J., 1986, "Real and Pseudo-Financial Crises" in *Financial Crises and the World Banking System,* ed. by Forrest Capie and Geoffrey E. Woods (New York: St. Martin's Press).

Truman, Edwin, 2003, *Inflation Targeting in the World Economy* (Washington: Institute for International Economics).

Wellink, Nout, 2002, "Current Issues in Central Banking", (Oranjestad: Central Bank of Aruba), November 14.