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CHAPTER 1

DEFINITIONS OF FINANCIAL STABILITY

“Stability, that much overburdened word with unstabilized definition”¹

Introduction

Any survey of the literature in finance and banking leads to a conclusion that a state of affairs described as “financial stability” is undoubtedly an important idea for the theory and practice in those areas. At the same time, it is commonly agreed that relatively unambiguous and precise definitions and interpretations of the concept of financial stability have not been elaborated yet.

It may be argued that, with a few exceptions, the works by F. Mishkin [1991, 1999], and first and foremost, Schinasi [2004], plus several more recent works by M. Čihák et al. [2006, 2012], those who discuss financial stability do not have any clear vision what that term may mean. The utterance “financial stability” is usually applied as an interpretation of some results in purely “technical” considerations, when the term “risk” alone seems to be irrelevant or not too fashionable [Beck, 1999; Luhmann, 1991]². At the same time financial stability is applied as a kind of “mantra” or “trendy buzzword” in the language of grand theories and in policy making. It may be treated as a paradox that so many institutions and people emphasize significance of the term, which is so poorly defined.

This observation can be strengthened by the fact that in majority of considerations on financial stability no links are made to the meaning of such ideas as equilibrium and stability in economics, and in finance, not mentioning systems thinking. In addition, such issues as predictability/prediction and possible control

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¹ See: Bellman [1953]; Ashby [1963, p.73].

² Applications of the term “risk” in the “Risk Society” require separate considerations due to multitude of its interpretations, also in quantitative formal considerations.

of financial systems/markets/phenomena are absent in most of the works in which the notion “financial stability” is referred to.

The explanation of such a situation is stemming from the fact that the term financial stability should be treated as metaphor and/or analogy. Knowing the patterns how the meaning of the metaphor of financial stability is “emerging” in economic discourse, it should be possible to make an attempt to define it in a way which could be helpful both for possible further operationalizations and for more precise interpretations in theory and in policy making.

Applications of analogies and metaphors taken from physics, natural sciences and engineering have been an important factor in development of social sciences and economics. First and foremost, they are used to describe phenomena in one area with concepts drawn from another discipline e.g. the equilibrium of various physical systems – mechanic, thermodynamic, serving as a foundation of the concept of economic equilibrium. If they are employed as a tool for analysis, i.e. to describe causal relationships, predictions, or as predictive or normative categories, they always have to be defined in a more precise way than it is required for descriptive purposes. The importance of this challenge becomes even more vital when such concepts enter the language of policy making.

The disagreement and the absence of precision in defining may lead to the situation that the term “financial stability” becomes a carrier of many positive and, at the same time, declarative features of finance at national and international level, but with a very low cognitive value translating into a limited applicability. Considering the above, the concept of financial stability gains a very positive connotation, although it may have different meaning for theorists and for practitioners in day-to-day practice. This may cause the distortions in the communication processes between the various institutions investigating the problem area. Furthermore, it may restrict the usefulness of the term “financial stability”, if not undermining the very reasons for its use in theory and policy making. .

The aim of the paper is to elaborate a preliminary survey of definitions and interpretations of financial stability. It may be asserted that it will never be possible to elaborate more precise explicit, “working” definitions of “financial stability”. Perhaps some operationalizations can be achievable. Instead, it is only possible to make an inventory of applications and interpretations of the term financial stability in the language of theory and policy making in finance at the macroeconomic level. Having such an inventory it will be possible to elaborate a typology of interpretations of financial stability and study in depth the diverse meanings of that utterance.

1. Stability in economics and social sciences

1.1. Stability in systems thinking

The concepts of equilibrium and stability were introduced firstly in mathematics and later were transferred to other areas – physics, biology, automatic control, etc. Subsequently, they have also become the key concepts of economics and social sciences. As to achieve the broadest possible scope of the applications of the concepts of equilibrium and stability, a reference to systems thinking can be proposed³.

It must be also underlined that the concepts taken from systems thinking can be used in economics and in social sciences either as mathematical models of different scope of relevance to the real situation or as metaphors and/or analogies.

The concept of stability is always analyzed in reference to an idea of equilibrium. In traditional systems thinking based upon first order cybernetics and/or theory of automatic control systems only the stable equilibria are predominantly valuable subject of investigation.

Mirroring the aforementioned areas of existence of equilibrium, in the discussion on system stability two important issues have to be distinguished:

- stability of equilibrium (equilibria),
- stability of the system treated as an entity.

The origins of discussion on stability in systems thinking can be traced in the works of Bellman whose concepts, developing the ideas of Lyapunov and Poincaré proved applicable in mathematical modelling of automatic control systems [Bellman, 1953]. In cybernetics stability is regarded as positive state even as an increased plausibility of survival, although with some exceptions [Ashby, 1963, p. 81]. Methods used to analyse stability are based upon differential equations and difference equations, depending whether the phenomena are of continuous or discrete character.

It can be thus summarized that in any definitions of stability relating to a system understood as a “set of elements standing in interaction” the following issues should be taken into account:

1. System identified by an observer described with a set of characteristics (parameters).
2. Patterns of macro- and microscopic of dynamics of the systems described with the use of the characteristics.
3. Influence of the dynamics of the parameters upon the entire system.

³ Broadly defined system thinking includes also cybernetics and complex systems studies. Relations between systems thinking and cybernetics were discussed in Mesjasz [1988]; Mesjasz [2010].

4. States of equilibrium for the parameters
5. Mechanisms (internal or external) of restoring equilibrium, i.e. mechanisms of achieving stability of parameters.
6. Relation between stability of parameters and of the entire system.

It is obvious that the links between stability of characteristics and stability of entire system may have a very complex character. However, in some cases a limited set of parameters and sometimes even a single representative parameter, which permit to describe macroscopic dynamics of entire system, e.g. entropy in thermodynamics.

1.2. Stability in economics

The term stability used in social sciences and in economics, including obviously financial stability, is applied either as a metaphor, metonymy, simile or analogy. In order to simplify the considerations it can be assumed that stability can be treated as a metaphor and other forms of transfer of meaning should be also considered in some cases⁴. Therefore it can be viewed as an idea brought to social sciences and economics from natural sciences, predominantly from physics. Such a phenomenon is not rare in history in economic thought [Mirowski, 1989; Mirowski, 1994].

Metaphors in social sciences can be used for the following approaches: descriptive, explanatory, predictive, normative, prescriptive, regulatory, retrospective, retrodictive. The notion stability can be associated with mathematics and physics, or in a somehow broader sense, with systems thinking, systems approach, whatever we may call it. It can be also easily traced in history of economic thought that analogies and metaphors taken from "science" (systems thinking) acquire a specific normative sense. Due to their origins in „rationalist" disciplines - mathematics, physics, chemistry and biology they are treated as objective and scientific in a rationalist sense. Thus their applications, in addition to enhanced explanative validity, by definition obtain supplemental, „sound", normative - predictive and prescriptive, legitimacy in any debate on social issues. Consequently, in those applications, but not only, their metaphoric sense is neglected or misinterpreted.

There are also other kinds of stability applicable in economics. In addition to structural stability, the divide between static and dynamic stability should be mentioned. Static stability indicates whether the economic forces that exert an impact on the system tend to make it move towards the equilibrium point, but does not explain the actual path of the system nor whether the system converges over time to

⁴ Metaphors are widely discussed in: Ortony [1979]; Tsoukas [1991]; Lakoff and Johnson [1995]; Morgan [1998].

the equilibrium point. The dynamic stability, based on functional analysis is more relevant to economic problems. In economic studies an already mentioned idea of orbitally stable behavior of the systems with periodic motion can be applied. Other types of stability useful in economic studies are distinguished according to the methods of its analysis - local and global stability study as well as “built-in” and “superimposed” dynamic stability analysis [Eatwell et al., 1987, p. 462].

Looking from the point of view systems thinking it may be stated that economic systems (organizations) can also behave in a way which could be captured with already mentioned idea of ultrastability. In such case in modern writings in economics and management an idea of learning organization (system) can be applied.

The cybernetical interpretation of stability has an impact on the new institutional economics, where stability is thematized as the stability of institutional arrangements. As D. North puts it: “A basic function of institutions is to provide stability and continuity by dampening the effects of relative price changes” [North, 1997]. Such an approach creates additional challenge since institutions are also changeable so the universal value is undermined. The concept of stability in stability policy opens the possibility for measuring instability as the deviation from goals and targets.

Even this superficial survey shows that stability in economics cannot be interpreted unequivocally. The difficulties are rooted in discrepancies in defining equilibrium in economics, and subsequently, are also resulting from differing interpretations of stability.

Preliminary assertions of stability expose its positive interpretations, similarly as in other areas of systems thinking, including social sciences. Similarly as in general considerations, stability understood as a tendency or at least expression of a tendency to remain in a steady state, cannot be treated in economics as an absolute positive and desirable state of affairs.

2. Origins of the concept of financial stability

Although it is commonly agreed that there is not any more or less specific definition of financial stability, yet many theoreticians and policy makers claim that this concept reflects a desired status of different kinds of financial systems. The search for origins of the term financial stability shows that it was emerging in policy considerations and in academic research as a consequence of disturbances of the financial markets. The results of an „archeological” search for the first applications of the concept of financial stability are of a very preliminary character.

Further inquiry should prove helpful in finding the first ideas of financial stability, the sources of their inspirations and their applications.

It is not simple to identify the author(s) or institution(s), who first made attempts to elaborate a definition of financial stability. Usually this idea is associated with the 19th Century origins of the concept of the Lender of Last Resort (LOLR) put before by H. Thornton [1939] and W. Bagehot [1962]. In several writings on financial stability, a kind of “homely” definition of a financial crisis for the UK by W. Bagehot is quoted. This was that you have a financial crisis “when the Bank of England is the only institution in which people have confidence”.

The term “financial stability” was introduced as an opposition to the concept of financial instability proposed by H. Minsky who treated instability as an equivalent of financial crisis [Minsky, 1977].

Results of a not yet too systematic search for the initial applications of the notion “financial stability” show the first use of this term in a paper on bank holding by R. Holland. He uses the terms “stability of financial institutions” and “financial stability” yet without any explanations. He refers to financial stability as a positive aspect of activities of a bank holding company while instability is rather vaguely interpreted as a negative situation [Holland, 1975].

The definitions of financial stability became necessary in the late 1990s when institutional foundations for new regime in the world financial system were established. They were correlated with establishment of such institutions as the Financial Stability Forum and G-20 in 1999 [Porter, 1999].

The Financial Stability Forum was established by the G-7 in April 1999, after the Asian and Russian financial crises, to provide a means for cooperation in the supervision of financial markets among national governments, international financial authorities, regulatory groups, and other experts. The forum’s membership includes central bank and treasury representatives and a financial services supervisor from each of the G-7 countries, a single representative of a few more economies, and representatives of several international financial institutions and of global standard setters for banking, securities, and insurance.

Another source of inspiration of the idea of financial stability can be associated with the financial instability hypothesis. It refers to an intrinsic predisposition of the credit-creating institutions, especially commercial banks and related lenders, to undergo periodic waves of crisis and bankruptcy. The hypothesis is most closely associated with the works of H. Minsky although the writings of some other authors, including even J. M. Keynes can also be associated with that concept [Newman et al., 2002, p. 75].

It may be even assumed that it was the financial instability hypothesis which became a source of inspiration for introduction of the term financial instability to other fields of theory and policy of finance and banking. Subsequently, a mirror “positive” idea of financial stability was promulgated and became one of the most important ideas of contemporary finance and banking.

3. A survey of definitions of financial stability

In spite of a large number of works on financial stability, the proposals of definitions are rather scarce and in most cases, rather superficial. They can be divided into the following groups:

- stability as the absence of instability and crisis,
- explicit and descriptive,
- stability of financial system,
- international financial stability,
- financial stability as a global public good.

3.1. Stability as the absence of instability and crisis

The “negative” definitions of financial stability are based on the assumption of the absence of crisis, or in a more scientific form, absence of instability. The “negative” definition has at least three advantages over other approaches.

Firstly, a tendency for simplifications can be found in theoretical considerations. M. Foot, the Honorary President of ACI United Kingdom (Association Cambiste Internationale) – The Financial Markets Association, has observed that the definitions referring to financial crises (the antithesis of financial stability), are not precise because most authors seem to assume that what constitutes a crisis is so obvious that it doesn’t need definition [Foot, 2003].

Secondly, in more or less rigorous empirical studies it is also easier to study financial crises as symptoms of acute instability than a vaguely defined financial stability in various stages - from moderate instability to difficult to describe “ideal” state.

Thirdly, for some researchers and practitioners stability is associated with no volatility, while volatility cannot be always treated as a negative feature of financial markets. Crisis sometimes can be a source of opportunity, an inspiration for positive change.

As it was earlier mentioned in, the first “negative” definition of financial stability understood as opposite to instability is being assigned by contemporary writers to an idea by Walter Bagehot describing the critical situation in Britain in

the 19th Century. Other definitions began to appear in the 1990s in response to demands of the financial crises and as a foundation for preventive and corrective activities of various financial and non-financial institutions.

Roger W. Ferguson, jr.

It seems useful at the outset to define financial stability and to do so 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. Economic research in recent years has identified a variety of market imperfections such as moral hazard and asymmetric information that, if widespread and significant, can result in threats to the functioning of any financial system, such as panics, bank runs, asset price bubbles, excessive leverage, and inadequate risk management.

.....I'll define financial instability as a situation characterized by these three basic criteria: (1) some important set of financial asset prices seem to have diverged sharply from fundamentals; and/or (2) market functioning and credit availability, domestically and perhaps internationally, have been significantly distorted; with the result that (3) aggregate spending deviates (or is likely to deviate) significantly, either above or below, from the economy's ability to produce [Ferguson, 2002].

Andrew Crockett

A. Crockett, General Manager of the BIS and Chairman of the Financial Stability Forum has proposed several interpretations of financial stability. The "negative" definition goes as follows: "...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" [Crockett, 1997a].

Another explicit definition of financial stability relating to financial institutions and markets proposed by A. Crockett and used in his subsequent texts [Crockett, 1997b, pp. 8-10]: “A distinction is commonly made between monetary stability and financial stability. ...Monetary stability refers to stability of general price level; financial stability, to the stability of the key financial institutions and markets that go up to make up the financial system. While these are conceptually separate objectives of policy, the linkages between the two are now increasingly recognized.I will take financial stability to apply to both institutions and markets. In other words, stability 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 process that reflect fundamental forces and that do not vary substantially over short periods when there have been no changes in fundamentals.

This does not, however, provide a full definition. Which are the “key institutions” whose stability is important? And what is the degree of price stability in financial markets that is required?

Stability in financial institutions means the absence of stresses that have the potential to cause measurable economic harm beyond a strictly limited group of customers and counterpart.Similarly, stability in financial markets means the absence of price movements that cause economic damage. Prices can and should move to reflect changes in economic fundamentals. It is only when prices in financial markets move by amounts that are much greater than can be accounted for the fundamentals, and do so in a way that damaging economic consequences, that one is justified in talking about “instability” or “crisis” in the financial system.

3.2. Explicit definitions

Age Bakker

In a broad sense, financial stability may be considered as a situation in which the financial sector is able to mobilize savings and allocate funds efficiently and to absorb shocks without major damage to the real economy or other parts of the financial system. Financial stability can be distinguished in the concepts of micro stability, which involves the health of individual financial institutions, and macro stability, which focuses on the health of the financial system as a whole, including the interrelationship between financial institutions, payment and settlement systems and financial markets. The costs of financial instability can be high, especially in emerging markets, where financial buffers to absorb shocks are much smaller [Bakker, 2003].

Wim Duisenberg

“...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 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” [Duisenberg, 2001].

Michael Foot

“To progress, we need a definition of financial stability. Let me offer one, which is that we have financial stability where there is: (a) monetary stability defined as *stability of the value of money (of course not identical with a constant value of money)* (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, non-contentious. 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” [Foot, 2003].

3.3. Descriptive definitions

To this group the definitions not referring directly to the term financial stability can be included. In several writings and speeches the authors either consider financial stability as a commonly well-known idea or try to enumerate risks, threats, determinants, assumptions, and other characteristics of financial stability.

Jean-Claude Trichet

J.-C. Trichet defined three main challenges for maintaining financial stability [Trichet, 2003]. The challenges are stemming from the fact that the „real world” deviates from the „frictionless” ideal world of academic textbooks due to market imperfections.

- 1. Imperfect information.** When information is not perfect – or when markets are not fully transparent – investors’ decisions may be constantly subject to reassessment, which can lead to inevitable volatility in market prices. This does not necessarily mean that there is an inherent threat to financial stability. On the contrary, the very existence of some level of volatility indicates that

markets are serving the function they are supposed to deliver – that they are an efficient exchange mechanism among economic agents. Nevertheless, some recent episodes of extreme volatility have drawn our attention to more accurately delineating the boundary between „normal” and what could be called „harmful” volatility.

2. **Complete market.** New risks are created as more rapidly evolving process of financial innovation, new instruments – and often entirely new markets – are being created, taking us towards more complete markets and providing remedies for the shortcomings of more traditional instruments and markets. While this process clearly increases the efficiency of the financial system, some new risks may also be created along the way. A major recent example is the emergence of instruments to transfer credit risks between banks and other financial institutions. This is changing the activities and risk profiles of financial institutions, as previously credit risks were largely confined to banks
3. **Absence of an international framework for crisis prevention and resolution.** The financial systems inevitably become more integrated, risks stemming from the potential lack of a common framework increase accordingly. Substantial coordination efforts are being made by the international community to overcome this friction.

Financial Stability Forum/Financial Stability Board

Another example of typically enumerative approach to financial stability has been proposed by the Financial Stability Forum. The 12 standard areas have been designated by the FSF as key for sound financial systems and deserving of priority implementation depending on country circumstances. While the key standards vary in terms of their degree of international endorsement, they are broadly accepted as representing minimum requirements for good practice. Some of the key standards are relevant for more than one policy area, e.g. sections of the Code of Good Practices on Transparency in Monetary and Financial Policies have relevance for aspects of payment and settlement as well as financial regulation and supervision [FSB].

3.4. Stability of financial system

Although in some definitions financial stability is treated as an attribute of financial system or monetary system but only in a few definitions the authors make a direct reference to financial system.

Tommaso Padoa-Schioppa

T. Padoa-Schioppa, presented a definition referring to financial system which is accepted by the ECB: ... 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. 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. ...we do not define financial stability as explicitly referring to banking stability only but it does not contradict the argument that banks play a crucial role in a soundness of the financial sector” [Padoa-Schioppa, 2003].

Nout Wellink

“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” [Wellink, 2002].

3.5. International financial stability

Most of definitions concern financial stability (stability of financial systems) within a borders of a country. In some instances, the stability extends beyond the borders and becomes and attribute of finance in a region or a facet of the financial system worldwide.

From several examples, the following definitions reflect the directions of studies on international financial stability.

Richard Portes

When considering the role of the EMU in strengthening “international financial stability” the author uses this notion in a very broad sense as absence of a situation when domestic financial crises (instabilities) spread through the world financial system. Occurrence of debt crisis in the 1980s, the Asian crisis in 1990s and then the twin or even triple crises in emerging markets involving exchange-market disturbances, threats to banking systems and sometimes sovereign debt default. According to R. Portes prevention of such crises should be shared both by international financial institutions and by the countries assuring safe flow of capitals worldwide [Portes, 2001].

3.6. Financial stability as a global public good

Together with other factors contributing to undisturbed functioning of financial systems financial stability is regarded as a specific public good. In consequence of spread of financial crises, international financial stability is viewed as a global public good which can be defined as an extension of the concept of public goods to involve more than one nation or country, socio-economic groups, or generations. This idea is promoted by the UNDP (UN).

Since there is no global government that can provide the global public good hence global cooperation becomes essential. Within that approach global financial stability is treated as opposite to crises and instability. Financial crises and the excessive financial volatility they entail constitute a global public bad.

Financial stability is considered as linked with market efficiency. The GPG (global public good) “financial stability and market efficiency” will only emerge, if all building blocks are in place - its national, regional, and global elements as well as required public and private contributions. Achieving the global public good (GPG) “financial stability and market efficiency” requires the following measures [Kaul et al., 2003]:

- to root the design of international cooperation in national policy goals and conditions and to look at GPGs as public goods that now require international cooperation but still ought to have positive utility for all nationally,
- to encourage broader participation in international financial policy-making as a means to reduce collective-action and information as well as burden-sharing problems,

- to engage more actively the epistemic community in exploring possible production paths of the “financial stability and market efficiency”, notably the complementarities between national, regional and international-level measures,
- to finance needed capacity building in developing countries out of the seigniorage earned by the central banks of industrial countries - as an integral part of their efforts to provide sound money.

Activities aiming at strengthening international financial stability are also undertaken by the Financial Stability Forum, G-20, BIS, the G-7 (G-8) and the IMF not always with a direct reference to a public global good [Portes, 2001; Koehler, 2001].

4. Definitions of financial stability by F. Mishkin and G. Schinasi

The above general definitions have predominantly a descriptive and/or enumerative character. Their authors tend to single out the features of financial stability and/or of financial systems without any reference to systemic mechanisms and/or economic theory. Only an introductory reference to mechanisms underneath financial systems stability is provided by T. Padoa-Schioppa [2003]. Other proposals of definitions can be treated as a kind of introductory institutional description.

One of the most influential writers in finance and banking made a link between financial instability and negative increasing consequences of asymmetric information. The assumption of the definition is that the institutional structure of financial markets has evolved to reduce the consequences of asymmetric information *ex ante* – adverse selection and *ex post* – moral hazard. According to his definition, 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” [Mishkin, 1999].

Four categories of factors lead to increases in asymmetric information problems and financial instability: deterioration of financial sector balance sheets, deterioration of balance sheets due to asset price changes, increases in interest rates and increases in uncertainty.

The main advantage of Mishkin’s “negative definition” is that although it refers to financial instability yet at least some attributes of financial crises are defined. These attributes can be then linked with “sound” economic theory – what the author is perfectly aware of, and they can be also explained with the conceptual apparatus of control theory, or in a broader sense, with systems thinking. The latter is not spelled out openly but the author.

All of the above four groups of factors can be also explained in terms of control, stability, equilibrium and disequilibrium taken from systems thinking, both based upon the first-order cybernetics and based upon the second-order cybernetics. The ideas referring to second order cybernetics, for example the role of observer and the learning process, can be easily associated with asymmetric information. Presence of perfect information allows for applications of external (mechanistic) metaphors. Such an approach is used in mechanistic models of markets.

The most comprehensive attempt to elaborate an explicit and comprehensive definition of financial stability was made by G. Schinasi of the International Monetary Fund [Schinasi, 2004; 2006]. This definition is based upon five principles which, in order to provide material for further discussion, are quoted almost in extenso.

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). 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.

Given the close 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.

The second 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). In other words, financial stability and what is usually regarded as a vital part of monetary stability overlap to a large extent.

The 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 mecha-

nisms that create resilience and prevent 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.

The fourth 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.

The fifth principle 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 definition consistent with this broad view is as follows [Schinasi, 2004]: “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 Schinasi's definition exposes the following features of financial stability:

- range of stability and continuum occurring across a multitude of observable and measurable variables – an analogy with health,
- multidimensional character,
- a broader approach than, as Schinasi calls that, Newtonian concepts of equilibrium and stability in some disciplines (including economics),
- 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,
- 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”,

- 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; 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 developments in financial stability are inherently difficult to forecast,
- 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).

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)”.

The definition of G. Schinasi provides the most comprehensive picture of all the ideas associated with financial stability. Similarly as in the case of the definition by F. Mishkin, the author tries to associate the “positive” definition of financial stability with at least phenomenology of more rigorous theory of economics and finance.

It may be concluded that the definition by Schinasi, and to a lesser extent, the definition by Mishkin, open the way for the following interpretations:

- possible inclusion into the discourse on financial stability more rigorous theoretical models elaborated in the mainstream theories of economics and finance,
- applications of more advanced models of systems thinking; in the case of the definitions by Mishkin it is the concept of a learning organization (social system), while in the case of the definition by Schinasi the declaration of opposition to mechanistic ideas of stability provides an opportunity to apply models drawn from complex systems theory – non-linearity, complexity, complex adaptive systems and the like; such an approach also gives the way for extending the discussion on financial stability with the ideas relating to complex learning systems.

5. Limitations of the definitions of financial stability

Confrontation of the theoretical considerations drawn from systems thinking and economic theory, which relate to stability of systems with a survey of ideas relating to financial stability (stability of financial systems), allows to draw several conclusions which go deeper than usual enumeration of easily identifiable deficiencies of definitions of that concept.

As a point of departure a typology of functions of financial stability can be distinguished [Oosterloo and Haan, 2003]:

- the objective of maintaining financial stability,
- the assessment of risk to financial stability⁵,
- the instruments that can be used in the case of a misalignment between the assessment and the objective,
- the decision-making process,
- the accountability of the institution that is responsible for maintaining financial stability.

The obstacles of accomplishing the above functions resulting from deficiencies in defining financial stability can be divided into three groups:

- epistemological limitations: omission of reference to the metaphorical sense of financial stability
- systemic aspects of stability, associated with theoretical and systemic meaning of the term, especially in relations to systems thinking and/or economic theory,
- limitations associated with definitions and functions of financial systems.

In most cases presented in the survey, the authors of definitions, and eventually their applications, use the term stability without a significant explanatory reference to existing body of knowledge in systems thinking and in economic theory. So far, the only exception are the ideas proposed by Schinasi and Mishkin.

In all proposals of definitions financial stability and/or stability of financial system is treated as a kind of “good thing” or equivalent to health as opposite to a “bad state” – crisis and/or instability. The metaphor of health of an organism is also used by Schinasi [2004, p. 7]. However, health in medicine cannot be precisely defined. It can be treated as a kind of objective described by a set of parameters. Using the same approach it would be then necessary to elaborate a set of characteristics of a stable financial system and relations among them.

⁵ Here even the use of the term „risk” is narrowing the sense of phenomena threatening (undermining, disturbing, etc.) financial stability and/or causing crisis/instability.

Additionally, again with an exception of the two aforementioned concepts, there are only a few references to the economic and financial theories of equilibrium and stability. Therefore it can be concluded that the source field of financial stability is not properly defined. It creates significant barriers to any efforts to define characteristics of financial stability. It may also hamper attempts of operationalization of the attributes of that term.

In the definition proposed by G. Schinasi [2004, p. 8] the classical source field of a metaphor of stability is rejected but not any constructive alternative is given: “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)”.

A question should be then asked: If the source field for the metaphor of stability is so widely extended to almost its denial thus what is the rationale for using such a term? Instead, perhaps it would be more sensible to use the concepts of “health”, “robustness”, “risks” or the contrary “fragility”.

Looking from a systemic point of view and from the point of view of economic theory, the existing definitions of stability, with an exception of the two aforementioned concepts, treat stability as a dormant metaphor. The meaning associated with a steady state is preserved in the term stability (*stabilitas*), so the metaphor cannot be treated as a dead metaphor. Such a status of the metaphor allows for various interpretations and undermines the communication process.

The systemic deficiencies of the definitions of financial stability are interrelated with the variety of specific definitions. There is nothing as a universal set of characteristics (dimensions) of financial stability (financial systems stability). As an attempt to provide such a universal set the 12 standard areas have been designated by the FSF as key for sound financial systems. They are so universal and incoherent, so they cannot be treated as more specific facets of financial stability (financial systems stability). They are a mixture of regulations, institutional arrangements and supplementary norms, e.g. Codes of Good Practices in Corporate Governance.

These deficiencies reflect only the obstacles in defining financial stability in terms of dimensions (attributes) of financial systems, financial markets and activities of institutions associated with and constituting them. This issue will also require further inquiry.

Multitude of definitions and applications of financial stability undoubtedly undermines its value as a vehicle of communication and policy making. The actors participating in the communication process bear in their mind different meanings

and the process of exchange of those meanings is distorted substantially. This situation should be studied with the conceptual apparatus of theory of social communication. It can be only concluded that the rhetoric of financial stability both in theoretical discourse and in policy making is of a very limited efficiency.

Financial stability can be also viewed as a reflexive and at the same time a performative utterance (“act of speech”) defined by J. Searle [1979]. As it was emphasized by S. Oosterloo and J. de Haan, the sheer fact of publication of “Reports on Financial Stability” or similar documents by central banks contributes to positive changes of phenomena captured in the meaning of the term financial stability [Oosterloo and Haan, 2003, pp. 18 - 19]. This result has been confirmed in a broad and systematic research done by a group of staff members of the IMF [Čihák, 2006; Čihák et al., 2012]. In other words, it may be stated that publications on financial stability contribute to its improvement.

Obviously one can hardly expect that specialists in finance and banking will begin to study linguistics as to understand better the sense of financial stability. However, since economics and finance can be viewed partly as a rhetoric science, and since a part of the difficulties with defining, studying and implementing measures leading to financial stability are resulting from the fact that many of the proponents of that idea are not aware of the limitations of that term, therefore this kind of reflection is also necessary in the further studies of financial stability [McCloskey, 1998].

Conclusions

The aim of the paper is to provide a preliminary answer to the following questions:

1. What are the theoretical and practical consequences of the absence of universally accepted definitions of financial stability?
2. What could be potential advantages to elaborate, if not a unique, so at least a limited number of widely accepted definitions of “financial stability” allowing to assess multiple aspects of functioning of various kinds of financial systems?
3. What should be the assumptions of such definitions?

The answer to the above question in the paper is positive and we formulate conditions determining the definition of financial stability as a normative concept of theory and policy making.

The main conclusions of the paper can be summarized as follows.

1. Any unique and universal definition of financial stability is obviously unachievable

2. Contemporary economic theory and systems thinking provide a sufficient conceptual apparatus allowing to elaborate “positive” explicit definitions of financial stability understood as an overall property of dynamics (change) of financial institutions and markets (systems) assessed as positive, according to commonly accepted universal criteria, as well as according to the criteria accepted by actors involved in shaping, maintaining and assessing that dynamics. The basic positive attributes of financial systems (institutions and markets) are: an enhanced possibility of prediction of phenomena adversely influencing that dynamics (risks) along with a capability to predict and eventually undertake/stimulate preventive/corrective/pre-emptive measures relating to those phenomena.
3. Due to the relations to dynamics and predictability the definitions can be specified and made relevant to the existing body of knowledge in theory of economics and finance. It especially concerns the ideas of stability and equilibrium used in economics and finance.
4. The definitions can be decomposed into dimensions reflecting characteristics of the markets and criteria of their assessment, characteristics of the institutions and criteria of their assessment and relations between the markets and the institutions – norms and activities.

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