

Systemic Risk: Policy Challenges

Remarks by

Manuel Sánchez

Member of the Governing Board of the Bank of Mexico

at the

MFI International Harper Lecture

Mexico City

May 11, 2011

It is a pleasure and an honor to participate in this panel of the MFI International Harper Lecture. For me, this conference is particularly relevant as the key note speaker is distinguished economist, Lars Peter Hansen, my former professor, a member of my thesis committee and a good friend. As in the days when I took courses from Lars at the University of Chicago, today I have learned a lot from his interesting presentation on systemic risk.

I would like to comment on some policy challenges related to systemic risk, hoping that they may complement Lars' deep empirical insights on this issue. In my remarks, I will emphasize three points: first, that the available definitions of systemic risk are dependent on judgment in an environment of uncertainty; second, that we need a deeper understanding of the causes of systemic risk, particularly regarding the distinction between root factors and symptoms; and third, that policy measures should be clearly designed to mitigate the causes of systemic risk. I would like to mention that these comments are entirely my own and do not necessarily reflect those of the Bank of Mexico.

The notion of systemic risk

Let me begin by recognizing that there is no widely accepted definition of systemic risk. However, any overview of research and policy reports in this area uncovers a frequently held notion of systemic risk as the possibility of a disruption affecting the normal functioning of the financial system.

There are at least three noteworthy elements of this common concept. One is the reference to the financial system. This definition implies a potentially large scope, as the referred system can comprise all financial intermediaries, regulated and unregulated; the markets of all financial assets; the infrastructure that the financial system uses to perform its tasks, including payments and settlements; and, the regulatory framework.

The second element is the allusion to normal functioning. The activities of any well operating financial system are many, but they can be summarized as intermediating payments, converting savings into lending usually through maturity transformation, and managing risk. However, to my knowledge, there are no clear indicators of what normal functioning is meant to be, which makes this qualification subjective, as it calls for the judgment of the observer or the policy maker.

For instance, do stock-market crashes or sudden and substantial currency depreciations constitute interruptions to normal functioning? What must be the depth of these adjustments in order to consider them deviations from normality? When does a “credit crunch” become disruptive? Unfortunately, neither economics nor experience gives an unequivocal answer to these questions. Still, any answer has necessarily policy implications.

The subjective characteristic of this notion does not disappear by resorting to the opposite concept of financial stability. Here again, although there is no universal definition, stability is usually interpreted as a situation in which the financial system is resilient to

disturbances that may threaten its normal functioning. In both concepts, sometimes disruptions are meant to be turbulences that may have a substantial negative impact on the real economy. Yet, this qualification only translates the vagueness from one term to another --i.e., when is the impact substantial?-- maintaining the nature of the assessment subjective.¹

The third element is the reference to a probabilistic world, as risk refers to the *possibility* of incurring in a negative outcome. For example, The Oxford English Dictionary defines risk as “the *possibility* of loss, injury, or other adverse or unwelcome circumstance; a *chance* or situation involving such a possibility”. However, any risk definition assumes all possible outcomes and their associated probabilities as known. As the unprecedented nature of the recent global crisis reminded us, prior knowledge of the probability distribution of the different kinds and degrees of disruptions can easily be incomplete. Hence, some potential negative events may be truly “unknown unknowns” and fall into the realm of uncertainty, not risk, as defined by Knight. In uncertainty, not all possible outcomes and their associated probabilities are known.²

The conclusion from this analysis is that available concepts of systemic risk are vague and too wide to be operationally useful. If any policy framework is to be designed and applied

¹ For example, the Riksbank defines “systemic risk” as the risk that a disruption will occur in the financial system that could lead to substantial cost for society, and “financial stability” as a situation where the financial system can maintain its basic functions and has resilience to disruptions that threaten these functions. See Sveriges Riksbank, *The Riksbank and Financial Stability 2010*, December.

² See Knight, F. H. (1921). *Risk, Uncertainty, and Profit*. Boston, MA: Hart, Schaffner & Marx; Houghton Mifflin Co.

in a meaningful way to counteract systemic risk we need to narrow this concept and make it more precise.

In this sense, precision implies measurability. As correctly stated by Lars Hansen, unless we are able to measure systemic risk objectively, quantitatively, and regularly, it is impossible to determine the appropriate trade-off between such risk and its rewards and, from a policy perspective and social welfare objective, how best to contain it. Lars' concern regarding the challenges of monitoring these risks in terms of modeling, measurement and data accessibility is of prime relevance.³

Sources of systemic risk

While the notion of systemic risk is vague, our knowledge about its possible causes is also limited. The inherent vulnerabilities of the financial system are relatively well understood. Examples are the term mismatches and leverage of individual financial intermediaries, and the imperfect information about risk exposure and soundness of particular banks and assets. Imperfect information and the interconnectedness of the different agents can transform individual vulnerabilities into systemic weakness. It is possible that a difficulty occurring in one component of the system could be extended to other elements. For example, economic agents interact with each other and an asset in one institution may be a liability in another, giving rise to interdependence and to a counterparty risk.

³ See Brunnermeier, M., L.P. Hansen, A. Kashyap, A. Krishnamurthy and A. W. Lo. (2010). "Modeling and Measuring Systemic Risk", October 15.

Financial institutions, such as banks, usually carry out analogous transactions that could also lead to similar risk exposures.

Instability is often thought to originate from a shock, triggered by a piece of information or rumors that may lead to a loss of confidence and panic. For instance, if a given intermediary is in trouble, there could be certain worries, derived from incomplete information, about the financial shape of other intermediaries. Although there may be cases of flawed news, usually this kind of shocks uncovers truly high risk exposures on the part of the intermediaries and participants being questioned. Furthermore, the unknown buildup of imbalances within the system, like maturity mismatches and excessive leverage, might become evident once such rumors begin to affect the financial intermediaries.

The design of policy measures to strengthen the financial system against systemic risk requires identifying the root causes of the excessive risk taking that typically precedes financial disruptions. This diagnosis is obscured because symptoms, such as poor credit evaluation by rating agencies and massive securitization, are often mistaken for causes.

In order to find causes, economics suggests searching for incentives. In this attempt, it is convenient to begin by verifying that no government policies induce excessive risk exposures. Factors with possibly unintended consequences may include policies to

maintain low interest rates for too long; measures to promote borrowing under artificially favorable conditions, perhaps in the pursuit of social objectives such as home ownership; and, government's guarantees for bailing out private risk exposures. These policies have the potential of promoting moral hazard.

In particular, when a market or infrastructure is capable of suffering difficulties that may lead to a disruption in the financial system, they are classified as "important". One problem with this categorization is that the possible systemic importance of institutions varies in time; an entity which is not considered systemic today may become one in the future. However, a deeper limitation of such classification is that it may exacerbate the risk taking of the agents involved, if they know in advance that, in case of difficulties, the government will protect them against losses.

Two factors currently stressed as important contributors to the emergence or aggravation of the recent financial crisis are global imbalances and sovereign risk. However, notwithstanding their importance, it is not clear if they can be considered root causes of the crisis.

Global imbalances come from the hypothesis that a "saving glut" during the years prior to 2007 caused interest rates to fall in the United States, thus promoting excessive risk taking on the part of economic agents. The existence of a "saving glut" has been debated. Arguments against it include historically low saving rates during those years and a possible negative effect from expansionary monetary policy on the U.S. low saving rate.

Additionally, one must recognize the fact that open economies naturally exhibit current account imbalances as a reflection of investment opportunities and saving motives.⁴

Nevertheless, while their relevance is still under debate, somehow global imbalances have taken a prominent role in risk diagnosis, ranging from threats to the world economic growth to the eventual emergence of a financial crisis. Consequently, the need for balancing current accounts in the world has gained ample acceptance. A potential dangerous outcome of this prescription is a movement toward protectionism and the implementation of a variety of distortive measures. Some of this has been evidenced in the capital controls imposed by some emerging economies experiencing currency appreciation.⁵

As for sovereign risk, the unsustainable path of certain euro member countries' public debt has threatened the stability of the European Monetary Union (EMU). The main reason is that banks and other financial institutions are substantial holders of the debt of troubled governments, and the associated default probabilities implicit in market debt prices are already too high and rising.

While there has likely been a negative effect from sovereign to systemic risk, one should

⁴ For opposing views, see Bernanke, B.S. (2005). "The Global Saving Glut and the U.S. Current Account Deficit." Remarks at the Sandridge Lecture, Virginia Association of Economics, Richmond, Virginia, March 10; and, Taylor, J. B. (2009). *Getting Off Track*. Hoover Institution Press.

⁵ For example, Mervyn King has warned that if an agreement on how to reduce imbalances is not reached, at best, there will be a weak recovery; at worst, the seeds of the next financial crisis will be sown; see King, M. (2011). "Global Imbalances: the Perspective of the Bank of England", February.

not exclude causation in the other direction. Among other factors, financial institutions took considerable exposure on the public debt from different countries because they rated all EMU sovereign issuers virtually risk-free. Apparently, they assumed that in case of difficulties, fiscally strong governments would bail out the weak ones, as it has been the case until now.

Policy measures

In light of the limited knowledge about the possible taxonomies of systemic risk, economic policy has to be both preventive and reactive to problems. In both cases, it is preferable not to introduce additional uncertainty. Hence, to the extent possible, it is advisable to rely on pre-announced rules rather than discretion.

On the preemptive front, any design should begin by eliminating incentives for excessive risk taking that might stem from economic policy itself. Once this is cleared, the regulatory framework should be strengthened to mitigate the built-in fragilities of the financial system and further align private incentives toward prudent risk taking.

For individual intermediaries, stringent capitalization and liquidity requirements are necessary. Also, as the crisis revealed, systemic risk is a super-additive phenomenon where the risk of the system is greater than the sum of risk of its parts. Therefore, these

standards should be complemented with macro prudential regulation. For example, regulatory standards can be proportional to the institution's potential contribution to estimated systemic risk and may include also countercyclical buffers such as those incorporated in the Basel III Accord. Additionally, public information about markets and institutions should be enhanced.

On the reactive front, authorities face the dual challenge of trying to opportunely detect possible systemic problems and, if they arise, attempt to neutralize them, without suppressing market discipline. Examples of macro prudential policy actions are lower loan-to-value ratios, securitization restrictions, and more stringent capital and liquidity requirements. It is convenient that these measures deal with the problem of systemic risk and not with other objectives, such as targeting certain values of a currency exchange rate, under the guise of a macro prudential approach.

A major challenge in accomplishing this task is the timely identification of systemic crisis signs. One should remember that recurrence of financial crises has been the norm and many of them have come as a surprise to supervisors, as it dramatically was the case with the recent financial debacle. Hence, it is important to avoid excessive expectations about what macro prudential policy can achieve, since this comfort could lead to distortive measures and moral hazard.

The final role refers to crisis management. This includes supplying liquidity on good collateral at penalty rates, according to the prescription of Bagehot, and the design and implementation of expedient resolution mechanisms, including “living wills”, for insolvent financial institutions.⁶

Concluding remarks

Preventing and counteracting systemic risk poses important challenges for policy making. A more specific notion of systemic risk is much needed and, as put by Lars Hansen, leaving the concept vague may become a justification for regulatory discretion. Also, understanding the sources of systemic risk is essential. Certainly, it would be quite inconvenient to combat a phenomenon that is not a root cause of systemic risk, generating inefficiencies such as protectionism. Finally, policy measures must avoid producing inadequate incentives and be both preventive and reactive, without removing the market discipline that is necessary for prudent risk taking.

⁶ See Bagehot, W. (1873). *Lombard Street: A Description of the Money Market*. E. Johnstone; Hartley Withers, eds. London: Henry S. King and Co.