Yutaka Yamaguchi: Systemic risk

Speech by Mr Yutaka Yamaguchi, Deputy Governor of the Bank of Japan and Chairman of the Committee on the Global Financial System, at the Third Joint Central Bank Research Conference on Risk Measurement and Systemic Risk held in Basel, Switzerland, 7 March 2002.

* * *

Introduction: A brief history of the Systemic Risk Conference

Ladies and gentlemen,

I am very pleased to join you at the third conference on "Risk Measurement and Systemic Risk". This theme has gained increasing importance since the first conference in 1995. The keen attention paid to it by the international community is evident in the fact that a number of international fora now endeavour to spot potential financial vulnerabilities which might lead to systemic crisis in the global market. Actually, the term "systemic risk" makes me a bit uneasy as it unfortunately has too realistic a connotation in my own country. I am looking forward to taking home new insights on this subject, and, as Chair of the Committee on the Global Financial System co-hosting this conference, I would be happy if you could do the same.

The aim of this series of conferences is to enhance our understanding of the mechanism through which a systemic shock is generated and transmitted. Meanwhile, during the six years since the first conference, we have witnessed significant changes in the world of finance. As a result, the focus of the conferences has changed over the years. If I may generalise at the risk of oversimplification, the centre stage of the first conference in 1995 was occupied by VaR methodology, which was then gaining acceptance at leading financial institutions. Reporters explored how risk could be quantitatively measured and what would be the real-life meaning of such measures. Well, in real life, crisis erupted in Asia in 1997 triggered by events that were largely beyond the bounds of standard VaR methodology. Naturally, discussions at the second conference in 1998 were much influenced by the Asian crisis. We began to realise that market microstructure theory could shed light on market dynamics in times of stress. Our third conference today carries this theme further, with many papers paying attention to what creates stress and how stress is contagious.

Triangular view of systemic risk

This brief history of our conference series suggests that with the structural changes in financial markets, systemic risk has revealed a few faces in actual crisis and therefore the nexus between them has to be more deeply explored. Conventional thinking or the narrowest coverage inextricably tied systemic risk to banks. Systemic disturbances that originate in a bank spill over to the banking system, which in turn adversely affects the real economy. Obviously, this bank-centred risk propagation still holds; in fact, much of the existing safety net is aimed at preventing a chain reaction within the banking system. However, it has now become evident that financial markets play a significant role as channels propagating the disturbances involving the banking system as well as the real economy.

The importance of the market and its dynamics is underscored by our recent experiences in Japan, the Asian region, Russia and the LTCM case. The novelty of the Russian and the LTCM crises lies in the fact that the largest capital market in the world "seized up" without entailing any banking crisis. It was often the case that the sudden deterioration in asset prices brought about turbulence in the financial system. To illustrate, the successive failures of major Japanese financial institutions in 1997 and 1998 were not directly triggered by a major default. Instead, their undoing was a rapid loss of confidence in the market. Typically, as the soundness of a bank was questioned in the market, prices of its stocks and credit ratings started to fall. The bank would then begin to experience funding difficulties, as its access to markets became problematic. In such a situation, the troubled bank had to resort to fire sales of assets, which in turn damaged its balance sheet and drove its stocks down even further. In this self-fulfilling spiral, several banks went out of business. At the same time, the deterioration in asset prices led to further difficulties in channelling funds to the corporate sector, a familiar credit crunch process.

A credit crunch is usually attributed to the dysfunction of the banking system – a correct observation of one aspect of such a phenomenon. A deeper look suggests that the process is more complex. We

have witnessed that the borrowers blame the banks for tightening credit standards, while the lenders complain of the lack of credit demand. No doubt, an important feedback mechanism also runs from the real economy to the financial system via corporate balance sheets, asset prices, banks' capital position, among others.

I am not attempting to draw definitive lessons from a specific episode of past crisis, let alone from the unsolved problems of the Japanese economy. However, the experiences of the last several years show that disturbances are multifaceted. Systemic problems develop as market risk, liquidity risk and credit risk factors interact with each other in a complex manner. This means that any evaluation of systemic risk based on one isolated factor could only provide a fragmentary view. What is called for is the "triangular view of systemic risk" – comprehensive analysis covering the interrelations or nexus between the banking system, financial markets and the real economy. It is against this background that I think we need to devote at least as much attention to market microstructure as to sophisticated analyses of "fat tails" in loss distribution. A focus on market microstructure could shed light on the relations between various risk factors. Particularly important is to investigate how individual market participants under different budget and information constraints would behave rationally in stressful events, and how such behaviour would affect the formation of asset prices.

Strategic interactions

Recent episodes of financial crises seem to defy explanation on the basis of conventional economic theory, which regards macroeconomic phenomena as a mere aggregate of independent decision-making by economic agents. As a reflection of such limitations of conventional theory, there is a growing body of work attempting to interpret financial crises from the viewpoint of "strategic interactions" among market participants. I would like to devote a few minutes to outlining why.

Strategic interaction can be defined as a process in which each market participant explores his/her optimal strategy by conjecturing the response of other participants. Some of the papers presented at this conference follow this path. Herding behaviour is one example. As you know, a large number of small investors tend to follow a small number of large investors. Once stressful events happen, such behaviour is likely to lead to one-sided market sentiment, which accelerates and propagates the stress within and across the markets. From the viewpoint of policymakers, herding behaviour as a phenomenon is hard to tackle. If we understand such a phenomenon as a consequence of strategic interactions among market participants, however, we might find a key to reducing the risk of triggering herding behaviour.

According to my reading of this line of research, the outbreak of systemic disturbances would heavily depend on how many market participants, when faced with systemic threats, expect disturbances to actually occur. In other words, a crisis is not necessarily an accident, but a consequence of market participants' expectations. Their expectations are formed from conjectural views of other market participants' responses to such threats. The magnitude of any crisis and the extent of contagion would critically depend on the feedback from market participants reacting collectively to systemic threats. Feedbacks could also accelerate any crisis. These explanations seem to offer a useful perspective on the mechanism of systemic disturbances and appropriate policy responses thereto.

The strategic interaction framework seems to offer us a roadmap for developing more stress-resistant markets. A possible approach would be to enhance the visibility of future stress. Let us suppose that there is a scenario consisting of a series of events leading to stress. If market participants have the view that such a scenario could result in a serious impact on a market in the future, they might take necessary actions to avoid losses which would materialise under the scenario. As market participants take necessary actions gradually and individually, the actual impact of events as they happen would be softened and stress would not materialise. In other words, a stress scenario would not remain a stress scenario once it is publicly recognised as such. In fact, we observe such episodes in financial markets. For example, proposed changes to accounting rules sometimes raise concerns initially, but only rarely would they result in severe impacts when they are implemented. Based on these experiences, I should say that an approach enhancing the visibility of stress appears more appealing. "Macro stress-census", an experiment conducted by the CGFS, might be one of the options for developing commonly recognised stress scenarios among market participants and central banks, although not a panacea.

Challenges to central banks

Before concluding my remarks, let me outline the challenges facing central banks with regard to systemic risk. In the six years since the first Systemic Risk Conference, we have learned considerably from our involvement in real-life crises and through intellectual interchanges at this conference and other venues. At the same time, one answer leads to new questions and there remain many unanswered questions. The same can be said for policy responses by central banks in times of financial crisis.

In relation to policy responses to systemic risk, we have generally recognised the importance of both pre-emptive actions, ie actions aimed at preventing systemic problems, and after-the-fact measures to contain an unfolding crisis. In this regard, I see a greater rationale than ever for views that stress the importance of preventive measures. This is because globalisation of financial markets and consolidation of financial institutions have considerably raised the possible costs of dealing with actual systemic disturbances. To this end, the strengthening of market discipline as well as supervision would be essential, and the international community has made serious joint efforts.

However, even the best of preventive measures may not be always successful in completely removing sources of systemic crises in an environment where financial intermediation keeps evolving at a speed beyond our wildest imagination. If there is the slightest chance of severe financial disturbances, the central bank must not lower its guard. In envisaging crisis management, the changing environment could compel us to rethink established doctrines.

For example, there is no doubt about stressing that we need to minimise moral hazard. Nevertheless, in the event that a systemic crisis is actually unfolding, we must not overlook the fact that there is an inherent, conflicting aspect in crisis management. In a sense, crisis management artificially creates moral hazard in order to avoid catastrophic consequences. In real-life policy responses, authorities inevitably face a trade-off between prevention of systemic crisis and minimisation of moral hazard. Another example concerns the traditional lender of last resort functions of the central bank. According to traditional thinking, this is aimed only at banks. But the contemporary reality, as I noted earlier, is that systemic problems could originate in financial markets and such markets are populated not only by banks but also by a large number of non-bank financial institutions and conglomerates. This may argue in favour of the view that the traditional principle should be augmented. A related issue is the conditions under which central banks would take certain policy actions, such as invoking their lender of the last resort functions. Traditionally, “constructive ambiguity” was regarded as the golden rule in such cases, but the Bank of Japan distanced itself from this in dealing with the crisis in the late 1990s, with a view to precluding speculations and enhancing policy transparency and accountability. The issue of the practical significance of “constructive ambiguity” must be explored vigorously without leaving any ambiguity.

Conclusions

Today, I have offered my views on systemic risk, which might have raised more questions than answers for central banks. In concluding my remarks, I would like to stress that central banks must continue to pursue these issues to discharge their responsibilities. The responsibilities arise from the following facts. First, central banks are unique economic agents having relations with each corner of the systemic risk triangle – the banking system, financial markets and the real economy. Second, central banks are expected to confront almost every systemic crisis as entities that can readily provide liquidity. Fortunately, central banks have made progress in gaining insights through extensive research on market dynamics. Nevertheless, central banks must not be satisfied with what they have achieved so far. In order to answer the remaining questions, and refine views on established concepts, we are looking forward to continuously interacting with market participants, who have first-hand knowledge of the markets, and members of academia, who have been laying the groundwork. In this regard, I hope this series of conferences will remain a valuable venue that continues to inspire the central bank community. Thank you for your attention.