



*Public Documents
of the XXVIth Annual Conference of
the International Organization of
Securities Commissions
(IOSCO)*

23-29 June, 2001, Stockholm, Sweden

Plenary 2

Market Stability

*8. Financial Market Distress: Causes, Consequences and Policy Options,
Speech by Mr. Andrew Crockett*

*General Manager of the Bank for International Settlements
& Chairman of the Financial Stability Forum*

27 June 2001

Financial Market Distress: Causes, Consequences and Policy Options
27 June 2001, Stockholm

Andrew Crockett
General Manager, Bank for International Settlements,
Chairman, Financial Stability Forum

1. Introduction

It is a great pleasure to join you in Stockholm on the occasion of the 26th annual meeting of IOSCO. IOSCO is playing a key role in developing high and consistent standards of financial market regulation in its member countries. And it is taking its place with other international groupings and organisations in the shared endeavour to strengthen the international financial architecture. Securities regulators are contributing importantly to the work of the Financial Stability Forum; and they are working with their colleagues from other regulatory disciplines to improve supervisory practices in an increasingly complex financial marketplace. The underlying theme of these efforts is simple: to provide our economies with robust and efficient financial systems, that can support sustained, stable economic growth.

During the last two decades, following remarkable technological advances and market liberalisation, financial markets have become an increasingly important force shaping global economic developments. For the most part, this has contributed to improvements in resource allocation and a faster growth in living standards. At the same time, however, as we are painfully aware, there has been an increase in the number and severity of episodes of financial instability. How to deal with this instability has risen to the top of the international policy agenda. Those concerned with the prudential supervision of financial institutions and markets have found their activities in an unaccustomed spotlight.

Today, I am going to examine in a little more detail the issue of financial market distress: what are its symptoms and costs; what are its underlying causes; and what can be done to prevent it, or at least make its occurrence less frequent and severe. I will be making three basic points: *first*, the main cost of financial market distress is the risk of amplifying financial crises and their impact on economic activity. *Second*, despite some apparent differences, the genesis and dynamics of market distress bear a close similarity with those underlying the more familiar distress at financial institutions. *Third*, preventive action requires a three-pronged approach dealing with market infrastructure, the behaviour of individual institutions and market interactions.

Let me begin by defining market distress and considering its costs. I will then draw four observations from experience on the genesis and dynamics of market distress. Finally, I will derive some policy implications regarding prevention.

2. Financial Market Distress: definition and costs

The costs of market distress are less easy to quantify than the costs of failures at financial institutions. The latter have evident victims. Firms fail, shareholders and counterparties lose money, the taxpayer may be asked to shoulder costs of bail-out and recapitalisation. In contrast,

Panel Two
Mr. Andrew Crockett

it is possible to view price movements in financial markets, even large ones, as a natural part of the equilibrium-seeking process.

Yet markets, like financial intermediaries, serve their main function by facilitating real economic transactions. They are essential lubricants of economic activity. The financial system is the brain of the economy, directing resources to ultimate uses. Markets are just as capable of causing systemic costs when they malfunction, as are financial intermediaries when they fail in a more spectacular fashion.

The basic function of financial markets is to improve the allocation of resources and risks by: (i) **providing price signals** that aggregate the views and expectations of economic agents pursuing individual profit; and (ii) **permitting the transfer of resources and risks** in the light of participants' preferences and comparative advantages.

Among the characteristics of well-functioning markets are broad participation, low transactions costs and the ability to equilibrate supply and demand even under stressful conditions without unduly exacerbating price swings. This means that, ideally, markets should be fully liquid under normal conditions and should retain reasonable liquidity even under difficult conditions. Conversely, "market distress" can be defined as a situation in which trading is severely impaired or becomes impossible, quotations are difficult to obtain or disappear altogether, prices overshoot, and liquidity evaporates.

The importance of well-functioning financial markets, and the costs of malfunctions, have increased as markets have grown in size. One reason for this is that a greater share of investable resources now flows through markets as compared to financial intermediaries; and more of the attendant risks are unbundled and traded. Another reason is that institutions are making greater use of markets to manage risks, and the relevant risk-management technology is predicated on the assumption of continued liquidity. If markets were to fail to play the role assigned to them, not only would the efficiency of capital allocation be impaired, there could be an intensification of distress at financial institutions. Economic activity could be severely affected.

This is not just a hypothetical possibility. Market distress has accompanied most recent episodes of financial instability. Sometimes it is the original source of the disturbance, as in the case of the stock market crash of 1987, the bond market crash of 1994, and the turbulence in the autumn of 1998. Sometimes market turbulence has been a propagating mechanism, potentially amplifying the consequences of an existing disturbance. One thinks, for example, of the failure of Drexel Burnham Lambert in 1990 and of the East Asian crisis of 1997-98.

In most of these episodes, the consequences for real economic activity in the advanced industrial economies were relatively limited. But this was not the case for many emerging markets. They sometimes suffered severely. Nor can we be so sure that advanced financial systems will be so fortunate in the future. Risk management systems are becoming ever more dependent on market liquidity, and there remain concerns about how robust this liquidity will be under stress.

3. Genesis and dynamics of market stress

I would now like to make four observations about market distress that will be important for what I have to say later about prevention.

My **first** observation is that episodes of severe market stress are often preceded by extended periods in which, at least with hindsight, balance sheets become overextended through the accumulation of risk exposure relative to the capacity to bear risk. Symptoms include misalignments of prices in underlying markets ("bubbles"); increasing leverage; and aggressive trading strategies. A corollary of this is that markets may appear artificially liquid in the run-up to a period of market distress. Successful trading strategies in a rising market generate profits and reinforce the willingness to take risks, thus adding to market-making capacity. Liquidity seems greatest precisely at the moment when it is most vulnerable. Examples are the yield curve plays before the bond market crash of 1994; the carry trades that preceded the Asian crisis; and the relative value plays adopted by highly-leveraged institutions in the run-up to the 1998 market turbulence.

My **second** observation is that market dynamics are driven by the interaction of shifts in counterparty (credit) risks, cash liquidity constraints and risk management systems. Together, these determine the ability and willingness to trade. But they interact in a different way in times of stress than in normal times. Credit risks that are inherent in derivative contracts become greater when prices are moving by larger amounts. Counterparty creditworthiness is harder to judge in disturbed market conditions, which may provoke a retrenchment of exposures. Demands on cash liquidity (including collateral) increase to meet margin calls and to settle trades. And risk management systems may be sending signals to sell just as prices start to fall.

My **third** observation is that market stress, unlike earthquakes, storms and other natural phenomena, is not an exogenous event. It is the endogenous outcome of the collective behaviour of market participants. Risk management techniques that, in effect, treat the external environment as given, fail to capture feedback mechanisms. Thus, individually rational actions by institutions seeking protection from market turbulence may result in collectively undesirable outcomes. In 1987 so-called portfolio insurance strategies in fact contributed to the instability they were supposed to protect against. Stop-loss mechanisms can have a similar result. More recently, the widespread use of value-at-risk models has threatened to lead to a generalised retrenchment in the face of greater price volatility. If this happens, it is far from clear that the assumption of continuous liquidity that commonly underlies the use of VaR-based risk management will hold under disturbed market conditions.

My **fourth** and last observation is that the mechanisms underlying market distress are not so different from the more familiar ones that can generate failures of individual institutions. In both cases, risks can build up unrecognised during the benign phase of the economic cycle, when markets are buoyant and asset prices are rising. In both cases, a "run" can develop driven by concerns about counterparty credit and the adequacy of liquidity. And in both cases, there are self-fulfilling aspects to the process. Attempts by individual agents to either benefit from a boom or else protect themselves in a bust, can push the volatility that is already inherent in financial systems to pathological levels.

The corollary is that the frequently-made distinction between the stability of markets and that of institutions is exaggerated. Markets, like institutions, can stop functioning, and for similar

reasons. Moreover, distress in markets can spill over onto the stability of institutions, and vice-versa. The search for "permanent" market liquidity may prove illusory, and perceptions that it can be achieved may result in precisely the conditions that are conducive to the emergence of market stress.

4. The policy response

The problem I have sketched is a multi-faceted one. It should not be surprising, therefore, that it requires a multi-faceted policy response. Actions are needed to strengthen market infrastructure, to buttress the prudential management of individual institutions, and to monitor and influence market interactions. A multiplicity of players is involved, including central banks, regulatory and supervisory authorities, and market participants themselves. In what follows, I will outline some of the work that is being undertaken by the Basel Committee on Banking Supervision, IOSCO and various other international groupings represented in the Financial Stability Forum (FSF).

Let me begin by noting that the first precondition in any battle is to know your enemy. In the case of the battle to maintain financial stability, this means striving to better understand the problem. What makes for well-functioning markets? And what are the causes and features of malfunctioning?

A considerable amount of analytical work has been undertaken on these questions at the BIS, notably by the Committee on the Global Financial System (CGFS). I do not have time today to review the substantive conclusions of the analysis, but a listing of the subjects dealt with will suffice to give a flavour of the coverage. Useful studies have been published (and are available on the BIS website) on the determinants of market liquidity; the anatomy of market distress; the role of collateral; and possible implications of electronic trading platforms. Work is currently underway in the Committee in the transfer and trading of credit risk and the heterogeneity of players in markets.

These studies are the building blocks for the monitoring efforts by the CGFS and the Financial Stability Forum on market liquidity. The questions we are trying to answer are whether and why market liquidity has become more vulnerable as a result of structural changes in financial markets, and if so, what can be done to offset the consequences of this heightened vulnerability.

As I said, there is not time here to do justice to the depth of the analysis. Suffice it to say that there are a priori reasons to be concerned that liquidity may now be more fragile, and that the structural forces making for volatility in market prices may have strengthened. Regardless of the extent to which further research bears this out, it would obviously be prudent to consider responses that help strengthen stabilising forces in markets. I will consider here three levels of response.

(a) Infrastructure

The *first* is at the level of market infrastructure. A key aspect is improving trading platforms and payment and settlement systems. Here, much useful work has been undertaken by the Committee on Payment and Settlement Systems (CPSS), some of it in conjunction with IOSCO. Core principles for payments and, more recently, securities settlement systems have been

promulgated and are in the process of being implemented. These represent the fruits of long-standing efforts to encourage the adoption of arrangements to minimise risks in payment and settlement systems (e.g. Real-time Gross Settlement, RTGS; and Delivery-versus-payment, DVP). But more clearly remains to be done to implement the recommendations made.

Also important is work on the legal underpinnings of market contracts, particularly for new and untested instruments. Accounting conventions are another key priority. The establishment of the International Accounting Standards Board promises the possibility of high quality consistent international standards. Once again, continued efforts are required to translate principles into reality.

(b) *Microprudential regulation*

A *second* level of response is to improve risk management and financial soundness at individual institutions. Much has already been done by the relevant prudential authorities, particularly the BCBS, IOSCO and IAIS, and the cooperative venture they have established, the Joint Forum. It is worth noting, however, that the world does not stand still. Prudential norms have to evolve to keep pace with new financial instruments and new risk management practices. Moreover, with the blurring of functional distinctions between different types of financial institution, intensified cooperation and information-sharing between supervisory authorities will be called for.

The market turbulence of 1998 highlighted the need to have proper information about the risk profiles of a wide range of institutions, not just banks. It also revealed the limitations of risk-management techniques, such as value-at-risk, which are better suited for use in normal market conditions than in times of stress. To deal with these problems, there has been a drive to encourage better disclosure by all financial institutions, and in particular by those that make the most use of leverage. The FSF and the Multi-disciplinary Working Group (MDWG) have been prominent in these efforts.

At the same time, efforts are being made to encourage better management of counterparty risk, especially by bank supervisors, and a greater emphasis on stress-testing. Stress-testing was emphasised in the report of the Counterparty Risk Management Policy Group, chaired by Jerry Corrigan and Steve Thieke. The survey of the CGFS revealed that it is now being more widely used, though, once again, there is still a considerable distance to go.

(c) *Macroprudential interactions*

What is much less advanced, however, is thinking on how to monitor and influence the mutual interaction of the behaviour of individual market participants. This is the *third* level at which actions are needed to strengthen market functioning. It is also probably the most difficult. Techniques to take account of market dynamics in information and risk analysis are much less developed and understood than those aimed at strengthening infrastructures and conventional risk management practices. How can policies be designed to take explicit account of the endogeneity of market outcomes with respect to the behaviour of individual market participants?

One aspect of this is to develop, and possibly disclose, information about market vulnerabilities. This would inevitably be based on some form of aggregation of firms' risk management systems. The CGFS has already done some research work on the possible aggregation of positions in situations of market stress. A second protection is to encourage individual firms to build up

more ample safety cushions during good times, that can help to absorb losses or cover intensified risks during periods of market stress, rather than reacting in a mechanistic way to signals from risk management systems.

Other possible devices include the refinement and greater use of liquidity-at-risk models, to complement the more familiar value-at-risk techniques. Supervisors could also encourage institutions to use valuation techniques that took better account of the costs of realising value in distressed markets.

Finally, there is the issue for central banks of whether they should (or can) take action to limit the build-up of financial sector imbalances. Nobody suggests, of course, that central banks should target asset prices. But should central banks react more decisively when credit expansion accelerates, even though the short-term price outlook is benign?

This, and the other questions I have raised, do not have simple answers. But I have the feeling they will become increasingly central to our search to limit damaging market volatility, and enhance the self-stabilising properties of the financial system.

5. Conclusion

Looking back over the past two decades, it is clear that we have come a long way in understanding and controlling risks in the financial system. Groupings such as IOSCO, the Basel Committee, the International Association of Insurance Supervisors, and others have formulated standards of transparency and prudent conduct that serve as a focal point for raising financial standards.

Yet there is plainly much still to do. The incidence of crises has not diminished. And with the financial system ever more complex and integrated, we are all uncomfortably aware that disruptions have a greater and greater potential to snowball into a systemic crisis. The stakes, therefore, are high. And they will grow as markets continue to develop. To take just one example, the trading of credit risk could, over time, amount to a seismic shift in the functioning of the financial system.

It will be of the utmost importance to continue to deepen our understanding of the costs and anatomy of market stress. Only thus can we design appropriate responses, focus on prevention rather than resolution, and avoid the need for undesirably interventionist official responses when stresses arise. Moral hazard is an ever-present danger.

My final message is particularly important in this gathering. It is the need for continuous dialogue and cooperation among the different authorities involved to develop a common understanding of the nature of the problems and trade-offs and to frame appropriate solutions. We are all, from our particular perspectives, engaged in the search for a more robust and responsive financial system. Only by pooling our respective efforts can we expect to rise to the challenge of preserving stability in an ever more complex financial system.