Andrew Crockett: Marrying the micro- and macro-prudential dimensions of financial stability

Remarks by Mr Andrew Crockett, General Manager of the Bank for International Settlements and Chairman of the Financial Stability Forum, before the Eleventh International Conference of Banking Supervisors, held in Basel, 20-21 September 2000.

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This biennial event, which on this occasion the BIS has the honour of co-hosting, bears witness to the remarkable progress made by the supervisory profession over the last quarter of a century. Unforeseen by most, except perhaps the visionary, the failure in 1974 of a little-known medium-sized bank, Bankhaus Herstatt, was to mark the beginning of a long journey in the field of international co-operation among banking supervisory authorities. The Basel Concordat, the original Capital Accord and the Core Principles for Effective Banking Supervision are but a few of the landmarks that have set an example for regulators in the rest of the financial sector.

From its early beginnings in the Basel Committee, this process has progressively extended its geographical and institutional scope, embracing an increasing number of banking supervisors around the globe and, slowly but surely, involving securities and insurance supervisors as well. More recently, reflecting the growing prominence of financial stability objectives in the international policy agenda, banking regulation and supervision have become a core component of the reform of what has been somewhat grandiosely called the “international financial architecture”.

And yet, impressive as the road travelled is, the journey has probably just begun. The task of addressing financial instability is far from over. It is widely recognised that further progress is called for in the design and implementation of policies. The current efforts to revise the Capital Accord so as to heighten its sensitivity to risk and those to strengthen the geographical reach in implementing the Core Principles are vivid illustrations of this awareness. Moreover, the goalposts never stay still.

Where will the journey take us? In sketching the challenges ahead in the 21st century, as befits today’s theme, I would like to share with you some personal reflections on a possible future direction. I shall argue that in order to build most productively on past achievements in the pursuit of financial stability, we should strive for a better marriage between the micro-prudential and macro-prudential dimensions of the task. We should, in other words, consolidate a shift in perspective that is already taking place, complementing the micro-prudential perspective with increased awareness of, and attention to, the macro-prudential facet.

Banking supervisors have a key role to play in this endeavour, and, indeed, have already taken an active part in its early stages. But other authorities are inevitably involved. Consolidating the shift implies a greater consensus on diagnosis, remedies and allocation of responsibilities than exists at present. My remarks are intended simply as a small contribution to the building of that consensus. The changes in regulatory perspective I will discuss parallel to those in the evolution of economic thinking in the 20th century, which saw the emergence of macroeconomics as a separate discipline and, subsequently, a movement towards a longer-term horizon in policy making.

In what follows, I will first try and be very precise in defining the micro- and macro-prudential dimensions of financial stability, terms which are increasingly used but have eluded a clear categorisation. I will then elaborate on the reasons why a further shift is in my view justified in the light of the nature and costs of financial instability. After tracing the implications for regulatory and supervisory policy, I will conclude by identifying broader policy co-ordination issues. You will excuse me if I am deliberately provocative, in the interest of sharpening the issues and encouraging a broader debate.

I. The micro- and macro-prudential dimensions of financial stability

Promising discussions are often derailed by lack of precision in the definition of terms, when interlocutors *think* they share the same understanding but, in fact, do not. Arguably, the debate on the micro- and macro-prudential dimensions of financial stability is one such example.

For the sake of clarity, therefore, I will put forward two intentionally stylised definitions of the terms so as to highlight their differences. As I will portray them, they sketch the extremes of a conceptual spectrum along which the perspectives of supervisors and other authorities can then be located. While it is common to associate supervisors with the micro-prudential dimension, it will become apparent that, according to my definition, supervisory perspectives inevitably include elements of both, and that the macro-prudential element has been gaining ground in their thinking in recent years. Indeed, the mix differs within the supervisory profession and may even vary with the context of the discussion.

The distinction between the micro- and macro-prudential dimensions of financial stability is best drawn in terms of the ***objective*** of the tasks and of the ***conception*** of the mechanisms influencing economic outcomes. It has less to do with the ***instruments*** used in the pursuit of those objectives. Let me elaborate.

The macro-prudential ***objective*** can be defined as limiting the costs to the economy from financial distress, including those that arise from any moral hazard induced by the policies pursued. One could think of this objective as limiting the likelihood of the failure, and corresponding costs, of significant portions of the financial system. This is often loosely referred to as limiting "systemic risk".

In contrast, the micro-prudential objective can be seen as limiting the likelihood of failure of individual institutions. Again, loosely put, this means limiting "idiosyncratic risk". So defined, this objective is in turn probably best rationalised as a means of protecting depositors.

An obvious implication is that the macro-prudential dimension focuses on the risk of correlated failures, pays great attention to those characteristics of an institution, such as size, that determine its significance for the economy, and regards peer-group analysis as less relevant, or potentially misleading, unless tied to an institution's systemic role. After all, deviations from average behaviour assume that the average is correct. The micro-prudential dimension, by contrast, considers each institution in its own right, is thus not concerned with correlations per se and views peer-group analysis as a natural monitoring tool.

To bring out the contrast, think of the financial system as a portfolio of securities, ie the individual institutions. The macro-prudential perspective would focus on the ***overall*** performance of the portfolio; the micro-prudential vision would give equal and separate weight to the performance of ***each*** of its constituent securities.

Compare, for instance, the solvency standard that might be appropriate from a macro-prudential perspective with that which would be consistent with the micro-prudential objective I have sketched. By solvency standard I mean, for simplicity, a target probability of insolvency.

First, the macro-prudential solvency standard *for individual institutions* would be calibrated with reference to their systemic significance; its micro-prudential counterpart would be uniform for all.

Second, the macro-prudential standard *for the system as a whole* would be derived from a ***top-down*** approach, based on a view of the likelihood and costs of a systemic crisis. This, in turn, would inevitably imply a judgement about the possible correlation of financial difficulties among institutions. The corresponding micro-prudential standard would be derived from a ***bottom-up*** approach, from the aggregation of the uniform solvency standard that would apply to a "representative" institution.

As a corollary, the acceptable probability of a systemic crisis implicit in a macro-prudential standard would be lower than the acceptable probability of distress for any individual institution, because of the higher costs in terms of output. On the other hand, the overall level of capital in the system could be either higher or lower, depending on the size of the institutions and the correlation of exposures, which determine the effective degree of diversification in the system.

In terms of ***conceptions*** of the functioning of the economy, the macro-prudential dimension can be defined as viewing system outcomes as critically determined by the collective behaviour of individual institutions; in economic jargon, as "endogenous". Correspondingly, the micro-prudential dimension can be seen as regarding those outcomes as "exogenous" or given to the individual firms. As a corollary, so defined it also disregards any feedback of collective actions on the condition of individual institutions.

It follows that the macro-prudential paradigm stresses the possibility that actions that may seem desirable or reasonable from the perspective of individual institutions may result in unwelcome system outcomes. This is a logical contradiction in the micro-prudential vision as defined here.

Illustrations of such fallacies of composition are not hard to find. For instance, for a single bank it is only natural to tighten lending standards in a recession, but if all banks do the same the resulting impact on economic activity can lead to a further deterioration in the credit quality of its portfolio. The mirror image during the upswing could generate an unsustainable lending boom, sowing the seeds of subsequent financial instability. Likewise, cutting exposures as market prices fall can deepen the decline in those prices, leading to a drying up of liquidity and exacerbating financial distress. And similar mechanisms explain why the aggregation of short-maturity credits on a single counterparty might actually increase the risk profile of the individual exposures compared with portfolios with a longer maturity.

The quintessential micro-prudential dictum is that *"financial stability is ensured as long as each and every institution is sound"*. From a macro-prudential perspective, two objections can be levied against this, on the surface, compelling statement. First, it may strive for too much; second, it may deliver too little.

It may strive for too much, because the occasional failure of individual institutions is not the problem. Trying to avoid such outcomes risks providing excessive protection, with the result that market disciplinary and allocative mechanisms are weakened.

The statement may deliver too little, because while at one level it is a truism, ***how*** the soundness of each individual institution is pursued is crucial. Unless the authorities take into account the impact of the collective behaviour of institutions on economic outcomes, they may fail to monitor risks and take remedial action appropriately.

Where does the perspective of supervisors fit along this intentionally stylised micro-/macro-prudential spectrum? In principle, it could be located anywhere. In practice, I suspect that the micro-prudential elements still predominate.

To be sure, an increasing number of supervisors would feel quite comfortable with being associated with the task of limiting systemic risk. Certainly, references to the systemic costs of failures in the rationalisation of policies are common. And, as I will argue later, the macro-prudential facet of the supervisors' task has indeed been receiving greater attention in recent years, especially in the monitoring of potential vulnerabilities in the financial system and in the calibration of the supervisory review process to the nature of institutions.

Nevertheless, the use of the instruments at their disposal and the conception of the mechanisms underlying economic outcomes arguably reveal a greater degree of comfort with the micro-prudential perspective. For given risks, minimum capital standards do not differentiate among banks according to their significance for the economy. And a supervisor would hardly recommend not to tighten lending standards at an individual bank for fear that the end-result at system level would be a further deterioration in the credit quality of portfolios.

Most likely, the comparatively greater micro-prudential focus of supervisors reflects in no small measure depositor ("consumer") protection objectives. Indeed, it is common for this objective to be enshrined in their statutes. In addition, it may result in part from an understandable tendency to map tools, which necessarily operate on individual institutions, into goals. But, as I shall argue shortly, neither of these two conclusions is inevitable. Consumer protection objectives could be pursued through other means and even by other authorities, while supervisory tools can also be oriented towards macro-prudential objectives.

II. The costs and nature of financial instability

Strengthening the macro-prudential orientation of the regulatory and supervisory framework is important because of the costs and nature of financial instability. The main costs take the form of output losses. The nature of the processes generating instability puts a premium on a macro-prudential conception of economic behaviour. Let me expand briefly on each of these points.

We care about financial instability because it is wasteful. The asset price misalignments that typically precede and accompany financial instability can profoundly affect consumption and investment decisions, misallocating resources across sectors and over time. Distress in financial institutions and markets severely impairs the channelling of funds from savers to ultimate users and can destroy the capacity of the financial sector to generate credit. The resulting impact on economic activity can be severe and long lasting, and undermine the effectiveness of traditional macroeconomic policy tools such as monetary and fiscal levers.

The *direct* costs of banking crises are high: above 10% of GDP in more than a dozen cases in the past 15 years, according to IMF estimates. The *indirect* costs, including the impact on economic activity over time, would obviously be higher. The recent experience in Japan bears witness to the power of the forces at work, capable of hobbling even the largest and most mature industrial countries.

In a narrow sense, depositors may have been paid back. But, wearing a different hat, they hardly escaped the much more insidious and higher price tag of financial distress.

A macro-prudential conception of economic processes is essential to understand the nature of financial instability, and hence to monitor and address it. Of course, the episodes of financial distress that imply significant costs to society can result from the knock-on effects of the failure of a single institution due purely *to* firm-specific factors. However, more often than not, they arise from the exposure of groups of institutions to common risk factors. In turn, these common factors may sometimes be exogenous to financial processes (eg, a sudden supply-induced change in the price of oil). But they are typically the consequence of endogenous forces within the financial system that tend to amplify the economic cycle.

A review of the instances of financial instability would reveal some shared stylised elements. There is first an over-extension phase during which financial imbalances build up, accompanied by benign economic conditions. In this phase, asset prices are buoyant and their surge tends to feed, and be fed by, rapid credit expansion, domestically or internationally. Leverage, in overt or hidden forms, accumulates in balance sheets, masked in part by the favourable asset price developments. The trigger for a reversal is essentially unpredictable. It can originate either in the financial sphere (eg, an asset price correction) or in the real economy (eg a spontaneous unwinding of an investment boom). The process then moves into reverse. Ex post, a financial cycle is evident.

Behind this recurrent pattern are serious difficulties in measuring underlying risk, and a structure of incentives that hinders an appropriate behavioural response to changes in risk, even when these are correctly identified. Indicators of risk tend to be at their lowest at or close to the peak of the financial cycle, ie just at the point where, with hindsight, we can see that risk was greatest. Asset prices are buoyant, credit spreads are narrow and loan loss provisions low.

The tension between the micro- and macro-prudential perspectives is obvious both with respect to the measurement of risk and the behavioural response to it.

As regards ***measurement***, economic agents and markets appear reasonably good at assessing the *relative* risk of instruments, debtors and counterparties. They seem to find it considerably harder to evaluate the *absolute*, undiversifiable risk associated with the financial cycle. This requires a more sophisticated understanding of correlations and their evolution through time. In turn, a proper evaluation of the robustness of any historical relationship can only be based on some theory about the forces driving the economy and the interaction between the financial and real sectors. And such a theory would need to recognise the impact of the collective behaviour of institutions on financial distress.

The contrast between this perspective and current methodologies for assessing market and credit risk is striking. Typically, current approaches are based on some form of short-term extrapolation or, at best, time-invariant historical averages. Consider, for instance, the mechanical inputs used in calculating VaR for market risk. At bottom, approaches to measuring credit risk are not very different.

This view has important implications for how we think of risk evolving through time. The received wisdom is that risk increases in recessions and falls in booms. In contrast, it may be more helpful to think of risk as *increasing* during upswings, as financial imbalances build up, and *materialising* in recessions. The length of the horizon here is crucial. I will return to this point in a moment.

As regards ***behavioural responses***, incentive structures in financial markets can compound the problems arising from difficulties in measuring risk. Diversified shareholders with comparatively short investment horizons can demand overly ambitious returns. Competitive pressures encourage risk taking. The typical features of contracts and remuneration schedules for traders and money managers can have a similar effect. The same is true of “herd instinct”, namely the tendency to conform behaviour to the norm, or to the presumed better informed, for fear of being left behind and in the hope of limiting blame in the event of failure. And perceptions of official “safety nets” can play a similar role.

In different ways and to varying degrees, all of these forms of behaviour share a common characteristic: they may seem reasonable, even compelling, when considered in isolation, but they can result in undesirable outcomes once the system-wide impact of collective action is taken into account.

III. Implications for regulatory and supervisory policy

A strengthening of the macro-prudential orientation in the regulatory and supervisory framework would have implications for the relative weight assigned to different objectives, for the treatment of different institutions at a point in time, and for the assessment and mitigation of risk over time. Consider each of these in turn.

In terms of ***objectives***, a strengthening of the macro-prudential orientation would call for a further broadening of focus away from narrow depositor protection and towards systemic concerns. Its main benefit would be to permit a better balance between official intervention and market discipline. In turn, this could be conducive to sounder individual institutions too. At least in the public’s eye, the failure of individual institutions tends to be identified with the failure of supervisors to perform their duties. This considerably complicates their task, encouraging forbearance rather than orderly exit.

Implementing the shift requires that specific means be in place to protect depositors in the event of failure, relieving public pressure to forbear and adding to the credibility of the exit threat. Targeted deposit insurance schemes can play a useful role in this context.

In terms of the ***treatment of different institutions at a point in time***, the shift in focus would imply the calibration of regulatory and supervisory arrangements to the institutions’ systemic significance. Higher costs of failure for the system call for a higher degree of comfort in the soundness of the institutions that generate them. The greater difficulties in ensuring ex post their orderly exit further supports this view.

One way of implementing a calibrated approach would be through the supervisory review process. In fact, in several supervisory jurisdictions the authorities are already paying particular attention to the larger and more complex institutions, a step consistent with the shift suggested here. The planned strengthening of Pillar II can be a powerful instrument in this connection. A second, no doubt more complicated and controversial, possibility would be to consider extending the calibration to regulatory capital and other tools as well. Obvious concerns about level playing fields would need to be addressed in the process.

In terms of the ***measurement and mitigation of risk over time***, the key challenge is to take better account of the financial cycle that underlies financial instability. If risk increases in upswings and materialises in recessions, it stands to reason that defences should be built up in upswings so as to be relied upon when the rough times arrive. This would strengthen institutions’ ability to weather deteriorating economic conditions, when access to external financing becomes more costly and constrained. Moreover, by leaning against the wind, it could reduce the amplitude of the financial cycle, thereby limiting the risk of financial distress in the first place.

The reasoning is very familiar to macro-economists. It underlies, for instance, the operation of built-in fiscal stabilisers: tax revenue automatically rises as income increases and falls as income declines, dampening expenditures in booms and encouraging them in recessions. But it can equally apply to financial stability objectives, whether couched in terms of individual institutions or the system as a whole.

A crucial element of this perspective is the length of the horizon over which risk is measured and managed. The horizon is clearly longer than one year, a common yardstick for current banking practices in the area of credit risk, in line with the calendar rhythm for accounts and taxes. Conceptually, it should span whatever time is needed for a cycle to unfold. And because the timing of downswings is exceedingly hard to predict, the approach implies a focus on measuring the vulnerabilities that build up in the upswing and on the more recurrent features of cycles. We may not know exactly when the rainy day will come, but we can be pretty sure that it will. It is not wise to decide on policies or business strategies on the assumption that it will not, or that we can predict its timing with sufficient foresight.

Translating the basic logic of the argument into a set of practical arrangements raises a host of difficult issues. What instruments could be employed? The range is potentially quite large, including provisioning rules, regulatory capital, loan-to-value ratios and, more generally, other tools that can influence risk and pricing practices through the supervisory review process or, perhaps, disclosure standards. On what basis would those tools be adjusted? Issues such as the relevant aspects of the financial cycle to focus upon, the role of stress testing and the balance between rules and discretion come to mind here. More generally, any specific proposal would need to be assessed on its own merits, including an evaluation of any unintended side effects, such as its impact on regulatory arbitrage and competitive conditions.

These issues, however, are no different from those that pertain to any modification in regulatory and supervisory arrangements. In fact, in some supervisory jurisdictions changes in provisioning practices more in line with the logic outlined here either have been implemented or are being given serious consideration. Likewise, the increasing use of stress testing and current efforts devoted to the development of macro-prudential indicators are conceptually consistent with the same approach. A greater awareness of the significance of the questions raised here is gradually emerging.

IV. Policy co-ordination

A strengthening of the macro-prudential orientation of the regulatory and supervisory framework would also highlight a number of policy co-ordination issues. As the previous analysis makes clear, and supervisors are well aware, addressing financial stability is a multifaceted task. It involves a number of authorities with different perspectives and responsibilities. Indeed, some of the policy levers lie in the hands of authorities whose main task is not to address financial stability at all, even though their tools and decisions can have a significant impact on the process. The risk is that, in the absence of a consensus on diagnosis, remedies and allocation of responsibilities, certain potential weaknesses in our defences might remain unaddressed. Let me elaborate on these points with two illustrations: safety nets and the financial cycle.

I mentioned earlier that one potential source of distorted incentives for market participants are ill-designed *safety nets*, defined here to encompass those mechanisms aimed at containing the disruptive consequences of financial distress once it arises, thereby also instilling confidence in the financial system. Typical building blocks of safety nets include emergency liquidity assistance, deposit protection schemes and exit policies. As highlighted by experience over the last twenty years or so, ill-designed safety nets can be a significant cause of financial instability if they fail adequately to counteract the loss of market discipline that they induce (the “moral hazard” problem).

A macro-prudential orientation in financial stability policies requires safety nets whose structure and functioning address systemic risk. The role of targeted deposit insurance schemes in permitting supervisors credibly to focus on systemic risks is just one example; all aspects of exit strategies and assistance to institutions in distress play a part. Given the close interrelationship between the various components of a safety net, agreement is necessary on the basic objectives, characteristics and operation of its building blocks among a broad spectrum of official authorities. At a minimum, this would include supervisors, central banks and ministries of finance. Those countries experiencing widespread financial difficulties have typically followed this approach under pressure from events. Ideally, a more far-sighted decision making process would be desirable.

Likewise, most of the steps needed to address the risks associated with the ***financial cycle*** would require a dialogue with, and often the approval of, authorities with different perspectives. Changing provisioning practices, for instance, can raise eyebrows with tax authorities, the accounting profession and even securities regulators. More generally, discretion to alter valuation methods is generally not in the hands of supervisors. And a potentially powerful instrument to influence the financial cycle, interest rates, is controlled by central bankers. After all, credit expansion is the life-blood of the build up of financial imbalances.

Conclusion

To conclude, supervisors and other authorities are still facing major challenges in coming to grips with financial instability. To my mind, part of the solution to our shared concerns is a strengthening of the macro-prudential orientation in supervisory and regulatory arrangements. But that shift will need to be supported and complemented by consistent policies on the part of other authorities as well. We need to build a clearer consensus on diagnosis, remedies and allocation of responsibilities.

In some respects, the proposed shift in perspective parallels the evolution of economics thinking in the 20th century. Economists, too, had initially developed a view of the world in which the processes driving the economy as a whole were simply a replication of those in individual markets, as if the same image was blown up in scale. It was only in the 1930s, not least due to the writings of Keynes, that they clearly understood that the laws for the economy as a whole did not necessarily coincide with those for its individual components. Macroeconomics was born as a discipline in its own right, and has survived until the present day. It took a major world depression, in which incidentally financial crises played a prominent role, to spur that kind of thinking.

Likewise, after the failure of overly ambitious policies in the 1960s and 1970s, aimed at controlling short-term movements in output, we learnt the value of long-term horizons in policy making. Excessive focus on forecasts in economic variables over short horizons can, and often do, lead their users astray. We are simply not very good at forecasting the timing of peaks and troughs and have too little knowledge about the time pattern of the influence of our instruments on economic activity. Intended stabilisation may result in unintended destabilisation.

While the context and details are different, the basic lessons of this evolution in economic thinking can be of help to those whose task is to measure and manage risk. This includes not just official agencies but, crucially, market participants themselves, as the regulatory framework is gearing itself to rely increasingly on their own risk assessments. After all, anchors are no better than the soil in which they are planted. And that soil could, at worst, turn out to be quicksand, if it consists of inadequate risk perceptions and inflated asset values.

My remarks today are intended simply as a small awareness-raising step in what, if pursued, is likely to be a long road. In making them, I am encouraged by the fact that the proposed shift is by no means a new departure. Rather, it represents a strengthening of a process that has already begun. I also draw comfort from the remarkable achievements of supervisors over the last quarter of a century. I have little doubt that you will be building on those successes in the future with the same energy and determination with which you tackled the initial challenges. In doing so, you have provided an excellent example to the rest of the official community.