

## **Learning the lessons of the Crisis for Supervision.**

Keynote remarks by Andrew Crockett at the FSI/EMEAP High Level Meeting, “Better Supervision and Better Banking in a Post-Crisis Era. Kuala Lumpur, Jan 17, 2011.

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### **Introduction**

The financial crisis that started in 2007 was the worst in the advanced industrial countries since at least the 1930s. Emerging markets were somewhat less scarred, having learned useful lessons from their own earlier crises. Nevertheless, the consequences of the financial meltdown were both severe and widespread. An urgent priority for financial supervisors is to learn the lessons of the crisis, and to ensure such an episode is not repeated.

There were many contributory factors in the most recent financial crisis. Macroeconomic imbalances were associated with capital flows that facilitated the increase of leverage in indebted developed countries. Easy credit contributed to rising demand for residential housing and to increases in house prices that eventually proved unsustainable. Lenders and borrowers alike failed to appreciate the risk that asset prices might go into reverse. Rating agencies contributed to a climate of complacency about looming risks. Risk management in major financial institutions was at times woefully inadequate. Capital cushions were too low, and too much reliance was placed on the continuation of abundant liquidity in financial markets.

Banking supervisors cannot do much about the risks that arise from developments outside the banking sector. But they do have a responsibility to ensure that banking institutions are resilient to adverse developments in the

wider economy. Banks should be a source of stability in times of market volatility, not an independent source of instability. In the recent crisis, that was not the case. Financial sector weaknesses exacerbated the financial vulnerabilities that were exposed by developments in the real estate sector. In far too many cases, failure and distress required extreme actions by governments and central banks to prevent systemic collapse. Despite these actions, financial distress generated the deepest recession since the 1930s. We must examine carefully the practices that led to this result, and how it came about that supervision, despite its growing intensity and sophistication, was unable to foresee and prevent the distress that arose.

In my remarks today, I want to highlight how certain habits of thought, by both practitioners and supervisors, encouraged the belief that the system was safe, even as the dangers, so clear in hindsight, were mounting. Conceptual flaws in thinking about how to manage or supervise banks allowed vulnerabilities to arise. To avoid making the same mistakes again, it will be necessary not just to revise and tighten regulatory requirements, but also to manage and supervise banks in ways that are more sensitive to the emergence of future sources of risk. I will deal in turn with what I see as fundamental flaws in the approach to capital, liquidity, the management of risk in individual institutions, and systemic risk assessment.

## **I. Conceptual Weaknesses in Oversight of Banks**

### **(a) Capital**

The holding of adequate capital is central to the prudent management of a financial institution. There is no easy way, however, of assessing what constitutes an optimal capital cushion. Capital serves at least two purposes: to absorb losses in other parts of the balance sheet, while maintaining the confidence of depositors and other creditors; and to provide incentives to the owners of an enterprise to manage it prudently. While this is broadly understood, regulatory bodies, such as the Basel Committee on Banking Supervision, have not, to my knowledge, specified the nature of the losses that capital should be sufficient to

cover; nor have they been specific about how capital holding affects prudential incentives. Indeed, the initial 8% ratio under Basel I was selected without rigorous justification, and mainly because it was close to existing practice in the dominant financial jurisdictions. Despite its weak conceptual basis, 8% was maintained as the minimum ratio in Basel II, albeit with a much more sophisticated risk weighting of assets.

But what losses was this level of capital expected to cover? Or, put another way, which classes of bank claim was capital intended to protect? There is no clear statement of this in the published documents of the Basel Committee, and it is probable that members of the Committee had a range of views. However, the definition of capital provides a clue to what was implicitly assumed. There is a hierarchy of claims in a bank's balance sheet. Junior or subordinate claims are available to protect claims that are senior to them.

Ambivalence about the role of capital is evidenced by the fact that under Basel I and II there are several "tiers" of capital. The broadest definition includes a variety of subordinated debt securities, whose usability is effectively confined to the protection of depositors in the event of failure. Within the 8% overall minimum capital ratio, half, or 4%, must be held in the form of Tier 1 capital. In principle, this should be available to protect holders of securities that count as Tier 2 capital. But Tier 1 capital includes certain claims (trust preferred securities, for example) on which it would be very hard to impose losses without causing a generalized crisis of confidence in a bank. Only 2% of risk-weighted assets had to be held in the highest quality capital, i.e. equity and reserves, which is truly available to absorb losses. A cushion this small would be wholly inadequate to maintain a bank as a going concern under adverse economic conditions. It would not, therefore, provide an adequate cushion to encourage bank owners to continue to manage the bank so as to protect its viability.

Behind issues concerning the nature and quantity of capital lay a lack of clarity about what the purpose of capital was, a lack of clarity that extended to markets and supervisors alike. The market tended to see capital as a cost, to be minimized like any other cost. Beyond a modest cushion above regulatory minima,

therefore, banks were penalized in their stock market valuations for holding higher quality, more expensive capital. This complicated the task of those bank managements that regarded a strong balance sheet as a business asset, and a necessary safeguard against the consequences of financial turbulence.

Bank supervisors, to the extent they defined capital to include certain assets that could only be used *in extremis*, implicitly regarded capital as a means of protecting depositors (or the deposit insurance fund) in the case of failure. Only to a limited extent (the 2% minimum for high quality capital) did international standards recognize the role of capital in absorbing losses in a going concern. What the crisis has taught us is that capital should be regarded as the necessary cushion to preserve a bank as a going concern in all circumstances. Assets that are only available to a “gone concern” are of no use in forestalling financial instability.

#### (b) Liquidity

Most serious problems that banks encounter begin with a lack of liquidity. In crisis situations, banks are either unable to fund their balance sheet at reasonable cost, or unable to realize sufficient value from their loan and security portfolios. Indeed it is suspicions about the latter that lead to the former. Given the central role of lack of liquidity in generating and propagating crisis, it is surprising that regulation under Basel I and II gave relatively little attention to liquidity management, and that supervisors allowed banks to become so vulnerable to liquidity drains. Two factors contributed to these lacunae. First, it proved difficult (actually, impossible) to reach agreement on how to define liquidity, and set minimum standards. Thus, despite the importance of the matter, difficulties in quantifying requirements led to a lack of attention. Second, and to some extent justifying this lack of attention, there was a general presumption that improvements in market functioning had made liquidity less important. Under perfect competition, and with full information, it can be demonstrated that a solvent institution should always be able to fund itself. And if markets are fully efficient, assets should be continuously marketable at a fair price.

During the period of stability before the crisis, it seemed as though a benign view of liquidity could be justified. With the benefit of hindsight, however, we can see that the assets being accumulated by banks were increasingly difficult to value. This applied in particular to structured securities that were not widely traded in open markets, and that were based on hard-to-value real estate collateral. When the crisis hit, question marks over the value of asset portfolios raised questions about solvency, which, even if not justified by the initial facts, effectively dried up funding for institutions such as Bear Stearns, Northern Rock and Lehman Bros. Haircuts in the repo market were increased dramatically, and securities based on model valuations became almost impossible to dispose of.

The conceptual flaws in the approach to liquidity were (i) to assume that prospective liquidity could be judged on the basis of experience during periods of market stability; and (ii) to assume that solvency could ensure liquidity. Banks were too complacent about their funding sources, and supervisors did not ask the relevant questions about how funding strategies would function in times of stress.

### (c) Prudential risk management

This leads to a *third* area in which conceptual weaknesses led to vulnerabilities in banking systems. Risk management at individual institutions was allowed to become excessively reliant on mathematical measures of risk. The most widely known was the use of value-at-risk (VAR). The rigour of the mathematics used to model risk obscured the underlying uncertainties and led to a false sense of comfort.

Statistical techniques have their uses, but they can be dangerous when allowed to substitute for judgment. The use of VAR relies on three crucial assumptions: (i) that the distribution of outcomes in the future will correspond to that observed over the observation period in the past; (ii) that outcomes are log-normally distributed; and (iii) that markets are continuously liquid, so that positions can be costlessly adjusted in real time. Neither banks nor supervisors believed that these conditions would hold exactly. But over a period of relatively benign market

conditions, they came to believe they were a reasonable approximation of reality. In fact, of course, faced with both unprecedented exogenous shocks and endogenous reactions by market participants, actual responses diverged widely from model predictions. Price volatility exceeded that in the observation period by a factor of several times; “fat tails” in distributions became apparent; and extreme market illiquidity effectively prevented the adjustment of exposures. In brief, risk management failed to adequately model stress scenarios. The institutions that survived the crisis best were those whose risk management included rigorous scenario-testing, and incorporated judgments based on the possibility of extreme events.

(d) Systemic Risk assessment.

Finally, a *fourth* conceptual shortcoming was the implicit assumption that systemic vulnerabilities could be assessed by adding up the risks posed in individual institutions. Under atomistic competition, any single actor takes the economic environment as given. But when market participants respond to exogenous shocks in similar ways, the decisions taken by individual actors have an impact on the environment faced by all. This is particularly true in financial markets, where values are dependent on judgments made by others, which in turn depend on expectations of how the environment will change over time.

When banks formulate their risk management strategies on a static assessment of external conditions, they fail to take account of the dynamic consequences of interacting decisions by a range of other actors. Even more importantly, when supervisors focus on the risks posed by individual institutions, they may fail to take into account dynamic instability. This is most forcefully illustrated by the attempts by financial institutions, in a period of market instability, to reduce exposures by exiting positions. One player acting alone may be able to achieve this, but the collectivity of market participants cannot. Bankers and supervisors are of course aware of this, but since it is difficult to model, it tended to get ignored in risk assessment.

## II Strengthening stability

These four conceptual shortcomings need to be addressed in designing new regulatory rules for banks' behavior, and in implementing supervisory oversight. The two elements, regulation *and* supervision, are both important. Minimum ratios for capital and liquidity have to be implemented with a careful eye on the ultimate goals of these prudential cushions. Mechanical observance of rules is unlikely to do justice to the evolving risks on a changing financial marketplace. As I have argued earlier, practitioners and supervisors need to base their approaches to risk mitigation, not only in the observance of numerical ratios, but with an eye to the principles that underlie the ratios. In other words, rules-based regulation has to be complemented with principles-based supervision.

### (a) Capital standards

First, and arguably most important, the capital held by banking institutions needs to be sufficient, both in form and quantity, to permit the bank to function as a lender and a counterparty in periods of significant systemic stress. The *form* of capital is the easier question to address. Core capital should be fully available to absorb losses. There may be purposes for which capital in the form of subordinated debt is desirable, including as a liquidity cushion. But these purposes are strictly secondary to the principal purpose of capital and reserves, which is to cover losses while maintaining the viability of the bank.

Much more difficult to judge is how much capital to hold. One of the purposes of capital is to permit a bank to continue to operate and service its clients under adverse conditions. Banks and their supervisors must therefore seek to gauge the losses that would occur under extreme conditions (say, a crisis comparable to the one just experienced) then make sure that the capital cushion is sufficient to absorb the associated losses, while still leaving enough residual value to maintain confidence and continue to lend. To some extent, this can be quantified with specified minimum risk-weighted ratios. The Basel Committee has specified a

minimum ratio of 7%. Together with changes made in the way risk weights are connected, this translates to a core tier 1 ratio under Basel II of some 10-11%. It is worth noting that many large institutions survived the crisis with significantly smaller cushions than this. Moreover, it is highly unlikely that a large bank would jeopardize its standing by allowing its capital ratio to fall close to the minimum. My conclusion, therefore, is that the new ratios are sufficient to ensure that too little capital, by itself, is unlikely to be at the root of a future crisis.

But a numerical focus on capital ratios risks ignoring other important sources of risk. Supervisory judgment is needed to assess the overall risk culture within an organization, including sensitivity to hard-to-measure factors such as operational and reputational risk. Supervisors must not allow a focus on minimum capital ratios to obscure the need for judgments on the quality of risk management. Weak risk management can permit hidden concentrations of risk, and unrecognised embedded leverage, which can be even more dangerous than inadequate capital.

Of course, supervisors should not try to second-guess lending decisions that in a competitive market should be left to banks themselves. But supervisors do have to form a judgment of whether systems and controls are adequate to avoid excessively risky strategies, and to identify emerging vulnerabilities. Simple reliance on specified minimum ratios under internationally agreed standards is not enough.

If capital were a free good, the issue of how much capital is enough could be resolved by erring on the side of more. This is a tempting strategy. But there are both costs and risks in this approach. First, as I have just noted, capital is not in itself sufficient to ensure prudent operation. We would be lulling ourselves into a false sense of security if we thought that more capital was by itself the key to a better functioning banking system. Second, capital is not free. The holding of too much capital would add unnecessarily to the cost of intermediation, which would eventually be paid, not by banks but by users of financial services. In itself, this may be a minor price to pay for a more secure financial system. However, when costs of one kind of intermediation are increased, incentives are created to shift



finance to less-regulated channels. This is one of the lessons of Basel I and II, which encouraged the development of structured and securitized finance as a way of escaping capital requirements on traditional bank lending. It is particularly important that bank supervisors, in their attempts to make the banking sector safe, do not inadvertently create even greater risks in the non-bank financial sector.

#### (b) Liquidity standards

Liquidity standards are equally important, but even harder to specify rigorously. Banks are in the business of maturity transformation. One of their contributions to economic welfare is to increase the liquidity of ultimate claims by issuing liquid liabilities backed by less liquid assets. It is not realistic to eliminate all maturity transformation. Judgments therefore have to be made about how much liquidity banks have to maintain on their books, and where the responsibility of a central bank to prevent system-wide panic should take over.

These judgments include assessing how stable funding sources are, and how reliable individual securities markets are likely to remain. I am not sure the latest proposals from the Basel committee have got this balance quite right. Out of an understandable desire to secure banks liquidity in all contingencies, they risk hampering normal and useful market practices, such as the use of the interbank market to direct liquidity to where it is most needed. I am not sure, either, that the assessment of liquidity can be reduced to a simple formula. Much will depend on the interpretation by supervisors of actual cases. Moreover, strong liquidity management requires timely management information systems and careful advance planning with the involvement of senior management. Governance issues inevitably arise.

#### (c) Prudential Risk Management

Coming to the lessons to be learned for risk management, the main one is the need to assess resilience with reference to stress scenarios. Value at risk is of use mainly in times of stable market relationships. But risk management needs to pay primary attention to extreme scenarios. Banks' managements should gauge their risk management against the standard of how they can survive extreme downturns. Supervisors need to require stress scenario exercises, and make judgments about whether such scenarios are adequately rigorous and comparable across institutions. They also need to make sure that feedback effects from the actions of other market participants are properly taken into account; and that there is adequate oversight of market infrastructures and utilities.

#### (d) Assessing systemic risk

This leads to the final conceptual weakness I identified earlier, that of assessing systemic vulnerabilities. The crisis has highlighted the importance of systemic risk. However, there is a danger that the response to this awareness will be confined to an enhanced focus on large institutions. Such a focus may well be justified, but systemic risks generally arise not from an isolated failure of a large institution, but from (a) market developments that affect a range of institutions; and (b) endogenous responses within the financial sector that exacerbate an initial disturbance.

Key dangers are those of hidden risk concentrations and crowded trades. Individual institutions may have well-conceived risk management strategies, but if these rely on similar responses to unexpected developments, they may not be able to be implemented. Supervisors will need to pay additional attention to the "adding up" aspects of individual institutions risk-management strategies. In this connection, common responses by a group of smaller institutions can be just as damaging as the actions of a single large institution. Supervisors should engage in periodic scenario exercises, in order to judge not only the resilience of individual banks to stress, but also the collective resilience of the banking system as a whole.

### **III Is more needed?**

A popular perception is that the new capital and liquidity ratios are insufficient to ensure stability, and that their formulation has been unduly influenced by bank lobbying. Some therefore argue for additional safeguards, such as tighter capital and liquidity standards, the break-up of large institutions, or the forcible separation of different kinds of banking activity. How justified are these views?

#### **(a) Tighter capital and liquidity standards?**

In general, the claim that bank lobbying has succeeded in “weakening” proposed regulatory standards is something of a slur on regulators. In my experience, banks may lobby, but their arguments are only accepted to the extent that regulators are persuaded by the merits of the case. Where proposed new regulations have unintended consequences, or are unnecessary to achieve their stated objective, supervisors are prepared to amend their proposals. But they never do so just to accommodate banks’ desire for weaker oversight.

As I have noted earlier, the capital standards proposed under Basel III represent a very large increase over those required under Basel II. In fact, many large banks held less than this amount of capital before the recent crisis and survived it well. This suggests that, beyond a certain point, it is not lack of capital that generates problems, it is deficiencies in other aspects of risk management. Adding further to required capital ratios would not do much to enhance prudential safety and might divert attention away from other aspects of risk management.

With liquidity, it would be possible to ask banks to match the nominal maturity of assets and liabilities. But as I suggested earlier, maturity transformation is one of the ways in which banks facilitate the working of the real economy. It would be unfortunate to eliminate this contribution, in circumstances in which the ability of the authorities to provide liquidity in extreme circumstances need not create significant risk of taxpayer cost.

## (b) Breaking up banks?

A number of suggestions have been made for direct intervention in the structure of the banking industry. These include: breaking up large institutions; separating investment banking from commercial banking; creating narrow banks; and forbidding certain types of activity (eg, proprietary trading) in institutions benefiting from a safety net. Another type of proposal is to tax in some way institutions that are thought to benefit from a “too big to fail” status.

Behind these proposals are a number of beliefs, which are not always distinguished in the minds of the proponents. One is that large or complex institutions pose a disproportionate risk to systemic stability. Another is that there are relatively few economies of scale or scope in banking, so that breaking up banks has no significant costs. Yet another is that there is a public interest in the preservation of the payments system (utility banking) but much less in the preservation of other types of banking activities.

There is not time or space here to go into the merits of all these arguments here. But let me record that I find many of them to be either wrong or overstated. While large institutions are an important source of systemic risk, similar risks can be created when a large number of smaller institutions have similar business models, which in practice in the banking sector they often do. I believe, too, that there are important potential economies of scale and scope in banking, which existing academic research has not been well-designed to uncover. In retail banking, for example, fixed costs, especially for technology platforms and risk management systems, are an increasing share of total costs. In wholesale or investment banking, large multinational clients require services across different geographic jurisdiction and in different financial sector.

It is easier to agree that own-account (proprietary) trading is not a necessary part of a bank’s business model. But even here, it is difficult to devise clear rules. Most trading is undertaken for hedging, client servicing or market making purposes. It is not easy to separate individual trades into particular categories. Nor is it clear

that any potential problems should be dealt with by prohibitions, rather than the application of enhanced capital requirements.

More generally, there are also costs in giving governments the responsibility to decide on optimal market structures. There is a well-recognised case for promoting competition, and this may require at some stage a limitation on consolidation within the industry. There is also a good case for insisting that the structure that results from competition permit effective supervisory oversight. Finally, there is a case for prohibiting structures that lead to social risks that are not priced into individual costs. These represent justifiable reasons for intervention in market structure. But they need to be justified on their merits, not assumed.

### **Concluding remarks**

Let me conclude. The crisis has underlined the need for new rules by which regulators can oversee the banking system. But, in addition, it has demonstrated the need for both practitioners and supervisors to think about their responsibilities in different ways. Regulations are an expression in quantified form of minimum standards. These standards are in turn an expression of the principles by which bankers should prudently manage their institutions, and by which supervisors should ensure that systemic stability is maintained. Supervisors need to keep constantly in mind the principles that underlie regulation, and to see to it that the implementation of regulation, through supervision, is consistent with a financial system that meets society's need for a safe and efficient environment for promoting growth.

