Globally, banks are moving away from crude statutory capital adequacy measures based on credit exposures to sophisticated means of assessing capital at risk, for both internal control and capital allocation purposes. MICHAEL ULLMER and HARVEY CRAPP discuss the implications and their effect on regulation.

The development of capital adequacy standards has taken place in three phases: first "pre-Basle", then a focus by management on regulatory capital requirements, and now a more strategic focus that looks beyond these regulatory constraints to economic capital risk.

Pre-Basle, regulatory requirements were extremely basic, with little focus on capital adequacy. The result was balance-sheet management driven by the liquidity and prime asset requirements of the regulators. Capital was required for structural funding needs and long-term capital expenditure requirements.

Although very much a blunt instrument, the 1988 Basle capital standards have undoubtedly had a dramatic impact. The emphasis in international banking has switched from building assets for their own sake to strengthening the capital base; and with that has emerged a focus on improved profitability.

The current Basle standards are entirely driven by credit, with a relatively crude distinction between asset qualities. For example, all corporate exposures are uniformly weighted at 100 per cent. Quite reasonably, the supervisors make no apology for this, emphasising that the objective of the capital standards was to ensure that international banks were brought up to an acceptable minimum.

In 1994, the RBA changed the risk weighting to 100 per cent for home mortgages which had less than 20 per cent counterparty equity. This was seen by the market at the time as possibly reflecting a lack of independence of the RBA from the government's economic and political policy.

In recent times, the Basle approach to capital adequacy has begun to affect non-bank financial institutions as their supervisors move to adopt the guidelines. The Basle framework has become the model for the regulatory structures in areas such as building societies and credit unions. Although the framework was developed for banks operating internationally, it has proved to be flexible and durable in providing minimum standards for a far greater range of financial institutions.

Nevertheless, the response by bank management to the 1988 standards was extraordinary. Line management in the credit areas was quick to recognise the implications of the "cost of capital" of the different categories of asset quality, and the competitive advantage it gave to others not subject to Reserve Bank supervision (at that time including some notable state banks).

This led to a more focused approach to the "allocation" of capital to the business units within banks, as well as a growing realisation of the relative capital utilisation between on-balance sheet and off-balance sheet activity. What was intriguing was that nothing had changed in terms of the external forces on the bank. Yet this supervisory initiative clearly had a major impact on the way banks went about their business.

As the banking system around the world moved toward compliance with the Basle deadlines, at greatly different paces (some are not there yet), a series of major capital raisings by international banks took place. This led to a dramatic evolution of the capital markets, particularly in Europe, to satisfy the demand...
that was created. The result has been a significant increase in the capital ratios of the banking system as a whole.

**FUTURE DEVELOPMENTS**

The new round of supervisory developments affecting regulatory capital are focusing on more complex areas of risk, including interest-rate, foreign-exchange, equity and commodity exposures. They are also addressing the need to accommodate differing credit quality in terms of reduced requirements for marketable corporate debt that fits the definition of “qualifying securities”.

A number of measurement refinements concerning credit risk deal with various “add-ons” relating to off-balance-sheet instruments; others relating to market risk deal with the portfolio effect. There is also the hotly debated issue of netting, about which the Reserve Bank is taking a particularly rigorous stance over the legal status of bilateral netting arrangements.

These issues are especially important given the possibility that regulators may allow individual banks to use their own methods for measuring market risk. If capital were allocated to market risk on this basis, then greater reliance would be placed on the prudential risk audits currently conducted by bank auditors on behalf of the RBA.

Around the world, we are seeing the supervisors of other financial sectors effectively catching up with the framework that banks have faced for some years now. Further, in jurisdictions such as Europe the capital adequacy directives could over-lay, and possibly conflict with, the regulatory standards imposed on banks by Basle. This reflects the era of re-regulation that we are now in, and poses some interesting and potentially difficult times for bankers wishing to optimise the impact on their activities.

**THE CHANGING FOCUS**

Management focus on capital adequacy has moved from a keen prudential emphasis through some relatively crude approaches to capital allocation across business units with very basic measurements of return, and then to the current phase, which is introducing more complex risk-adjusted performance measures and capital allocation and utilisation models. The process is depicted in Figure 1.

From a regulatory perspective, the capital adequacy focus initially moved from the big picture to a simple approach driven around credit. This is not meant as a criticism, as it was a major achievement in 1988 to get the G10 countries to agree to any form of framework. Just as bankers are now moving into more sophisticated areas, so are the supervisors, as evidenced by new proposals which are very much risk-based and by a range of qualitative considerations in risk areas such as derivatives.

The external markets have also come a long way. Pre-Basle, there was little concept of capital adequacy from a prudential perspective. Now, the quantum of capital held is a key measure, as are the simple returns derived from it. Going forward, the markets will demand far more information, and on a more frequent basis, as to the risk appetite of banks and the actual risk profiles that are being run.

**LEVELS OF CAPITAL**

The 1988 Basle requirements have undoubtedly had a profound effect on banking. Capital strength has been consciously built up, and financial institutions are well aware that to be taken seriously by observers, rating agencies, analysts, customers and their own peers they need to be well capitalised. In part, this reflects greater conservatism following the credit problems of the 1980s. It is also driven by an awareness of the need for a buffer for the increased risks in areas such as derivatives.

A related issue is whether market expectations of the required level of capital are excessive. In Australia, the reality is that the expected level of Tier One is of the order of 8 per cent, notwithstanding the Basle minimum of 4 per cent. Some suggest that in part this has been driven by the narrow interests of the rating agencies, who are more interested in the ability to repay debt than the capacity of banks to earn adequate returns on the level of capital held.

An alternative view would be that the high levels of capital that are now carried may not be a bad thing, given the pivotal role that banks play in our economy. Perhaps it is the price to be paid (particularly by bank shareholders) for stability in the financial system. But are the levels of capital maintained really excessive?

Looking at the world top 1000 banks (see Figure 2), we can see the steady
increase in the quantum of capital held over the past five years. In terms of the percentage to assets, the graph would be improved if it related to risk-weighted assets rather than gross assets. Nevertheless, the trend is clear.

The Australian banking system is strongly capitalised by world standards, especially compared with our competitors in the Asian region (Figure 3). It is not surprising that Singaporean banks are the most strongly capitalised in the region, given the conservative stance of the Monetary Authority.

RETURN ON CAPITAL
As with capital ratios, there are ever-increasing expectations about the satisfactory level of return on equity.

Bank management is in something of a quandary. On one hand there are market expectations of prudence associated with increased capital levels and ratios, while on the other there are shareholder demands to generate a satisfactory return on equity.

This is a difficult combination for banks in a period of low inflation and low growth in banking assets. The resultant fierce competition and pressure on margins makes increased returns more difficult to achieve.

A more fundamental question is whether the benchmark returns being sought, in the range of 15 per cent to 25 per cent, are realistic, given the outlook for inflation and long bond rates.

What is clear is the direct impact this combination of factors has had on the pricing of transactions and product development. Both are in part driven by competitive forces in the marketplace; nevertheless, a small degree of rationality has been introduced in that bankers have a better idea of what pricing they should be achieving, even if the activities of their competitors prevent them from realising this goal.

In part, the positive outcomes on returns have been achieved through growth in non-interest income. Initially, this came from increased fees and commissions from traditional banking business, although the intensity of competition may threaten this source. More recently, banks around the world have made substantial profits from trading activities, but whether these are sustainable is problematic.

On the statistics on returns from The Banker Top 1000, Australia also compares well (Figure 4). The performance of the Chinese banks is interesting, given the huge capacity to improve the efficiency of their banking system.

UTILISATION OF CAPITAL
The competing demands of the supervisors, in terms of the volume of capital, and from the market, in terms of return on capital, have forced bank management to focus on how best to utilise capital resources.

In an intensely competitive environment, the only real growth in lending...
opportunities has been the housing sector, and asset allocation has recently skewed in this direction, despite attempts at suasion by the government and the increased risk weighting for more highly geared home mortgages.

There has been very little credit demand in other areas. There is no evidence to suggest bankers are imposing a credit squeeze on small business. Indeed, the banks have been facing a run-off of their books as the loans mature and are not refinanced.

Thus many bankers have recently faced the reverse of the problem that led them to raise new capital - much of it in new forms - in the early days of capital adequacy requirements, particularly during periods of rapid asset growth. They are now reviewing the various layers of pseudo-equity products and identifying those which cannot be justified in terms of cost and, where possible, retiring them.

This focus on better utilisation of capital is, of course, a major driving force behind the push by the banks for regulations allowing netting, although some banks believe that a legislative solution is required to provide legal certainty.

**IMPLICATIONS FOR RISK MANAGEMENT**

Drawing all this together, we can see (Figure 5) how the regulatory and market pressures on capital have led to a management response that focuses on more sophisticated capital allocation methodologies, and risk-based performance measures that drive on down through the business unit structure to evaluate both customer and product profitability.

Figure 6 characterises the different levels of sophistication currently in place for performance and capital allocation methodologies.

Some may be offended by the "quick and dirty" classification, but it is where many financial institutions have moved in the belief that they have achieved best practice.

"Good practice" is being investigated by a number of financial institutions, and is in use by a few. This involves looking at much finer measures driven at the instrument or transaction level. Risk-adjusted returns on capital are the basis for business development decisions. Planning is driven by a bottom-up approach of aggregating capital at risk by business unit.

The "cutting edge" is being developed at a much more sophisticated level. Not only does this demand enormous intellectual skill but also very complex systems. Nevertheless, as the margins become finer and the volatilities greater, these are the sorts of measures that bankers will progressively have to turn to. Risk adjusted returns on risk adjusted capital are being used to drive pricing decisions, as well as how line bankers are compensated. This can involve an internal market in capital where business units are allowed to bid between themselves for surplus capacity.

Figure 7: How RARORAC works
RISK-ADJUSTED PERFORMANCE MEASUREMENT

Risk-adjusted return on risk-adjusted capital (RARORAC) is at the more sophisticated end of the performance measurement spectrum. RARORAC (see Figure 7) is a deceptively simple concept. The challenge, particularly when driving this at a customer or product level, is to obtain reliable information for each of the component parts.

RISK CAPITAL ALLOCATION

This level of capital allocation is particularly sophisticated and is usually developed through an evolutionary approach.

The four guiding principles typically followed by premier banks that have developed a risk capital allocation methodology are:

- that the requirements should be determined at as low a level as possible, and then aggregated up through the management hierarchy. Thus, for example, within a treasury, risk capital will be allocated to individual dealing desks;
- at the same time, a top-level committee needs to decide the overall risk tolerance of the institution;
- the allocation of risk capital then cascades down through the management chain, based primarily, but not exclusively, on RARORAC measures;
- the risk capital allocation process must be sufficiently flexible both to provide business units with the required risk capital to support day-to-day activities, and to provide access to the risk capital needed by the organisation for special strategic circumstances. This process needs to be fast enough not to impose constraints on business.

Implementation can follow a two-phase approach.

In Phase 1, risk capital is allocated by the risk-management committee to business units using a top-down approach. This is likely to be done quarterly.

In Phase 2, as business units and senior management become more familiar with managing their businesses within risk-capital limits, the bottom-up bidding process for the allocation of risk capital will develop. Ultimately this may result in a dynamic risk-capital allocation process, based on frequent measurement and an internal market for the transfer of risk capital within the institution.

This approach is illustrated in Figure 8. Other variants will be appropriate given the particular circumstances and risk tolerance of the financial institution.

STRATEGIC IMPLICATIONS

Summing up, increasingly there is a need to understand the business dynamics, the risk profile that the institution is prepared to run, and is running, and how this is affected by the constraints imposed through the supervisory framework.

The interaction of these factors is becoming more complex. Further, this is not an academic exercise, as the outcome of decisions taken in these areas has a direct bearing on an institution’s capacity to compete in the market.

Unfortunately, as the methodologies become more complex they can be beyond the capacity of top management, and the board, to understand fully. Hence the G30 recommendations on the need for information of this nature to be communicated in a clear and understandable way to the top. These recommendations have been extended in the recent guidance issued by the Basic Committee, advising that there should be at least two people at board level who actually understand the complexities.

The other critical factor is the demands these methodologies place on bank systems. This is a particular issue for the major banks, especially if their system configurations lack flexibility. Going forward, this could be a key factor in their ability to compete in the marketplace.

THE FUTURE?

The regulatory framework will be increasingly driven by concerns about volatility in market factors, profit and capital and, indeed, fear of the implications of derivatives.

A concern is the regulatory focus on product types rather than risk types and portfolios. This focus does not reflect how bankers should manage their businesses, or how they should be supervised. The derivatives disclosure recommendations of the Fisher Group recognise this shift, and consequently require banks to have systems in place to provide the needed information.

We have already seen the beginning of the trend for supervisors to address qualitative issues in their regulatory expectations. This will be a feature in Australia as the Reserve Bank quite properly moves down the path of placing more specific and comprehensive demands on the deliverables from the external audits of bank systems as part of the tripartite relationship.

Finally, analysts will demand more and more transparent information, on a more frequent basis, about the risk profiles being run by financial institutions. This will also be an area of focus for the supervisors, and again is likely to come through in the tripartite arrangements with external auditors.

Perhaps one day banks will have to post bulletins in every branch on the risk profile being run that day. A dream for economists, a nightmare for bankers.