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# The Many Faces of Risk in Banking

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*Talk by the Deputy Governor, Mr G.J.Thompson, to the Australian Institute of Banking and Finance, Canberra, 12 June 1997.*

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## Introduction

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I would like to talk today about various aspects of risk in banking. One modern notion is that banking essentially consists of processing information and managing risk. While the average person in the street probably has a more prosaic – not to say jaundiced – view of banks, risk management is indeed very much a core activity for bankers.

And it is of fundamental concern to bank supervisors, such as the RBA, that banks are doing this job reasonably well – that all the big risks are identified clearly, measured accurately, monitored continuously and kept within prudent bounds. Bank supervision in recent years has focused much more intensively on the quality of the systems which banks use for these tasks.

It seems that banks and their supervisors are having to contend with a steadily growing array of risks.

Derivatives risk, operational risk and environmental risk have all come to prominence in the past decade or so. And public relations risk is a major ongoing challenge for banks!

One even hears occasionally of ‘regulation risk’ – which seems to relate to the capricious demands of regulatory agencies. Needless to say, this one has not been high on our list of concerns for the Australian banking system!

I propose to touch on only three areas of banking risk:

- old-fashioned credit risk;
  - interbank settlement risk; and
  - the Year 2000 problem – a kind of operational risk visited upon the world by the approach of the new millennium, and the short-sightedness of 1970s computer programmers with a penchant for abbreviation!
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## Credit Risk

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All of the major periods of stress in Australian banking have been caused by credit losses. In the most recent episode – in the late 1980s and early 1990s – banks wrote off over \$25 billion in loan losses.

There have been recent comments from some bankers and others that lending standards are slackening once again, perhaps threatening another such round.

One reaction would be that these comments are rather alarmist. After all, on most indicators, banks’ asset quality position is very

sound. Impaired loans are less than one per cent of their total assets, the lowest point since we started collecting statistics seven years ago. Furthermore, the rate at which assets are becoming impaired has been stable for some time, and shows no signs of an upturn. 'Past due' loans kicked up in 1995 and early 1996 but have stabilised recently, still at relatively low levels.

The broader environment also has fewer worrying features than in the 1980s:

- aggregate bank credit is expanding much less rapidly than then (although inflation rates are also down quite a bit);
- the financial position of business borrowers is generally quite healthy with debt to equity ratios lower, and interest coverage higher, than in the late 1980s; and
- while asset prices are rising, there is no sign of the bubbles we saw in the 1980s; commercial property prices are up only modestly from their low points of 1993.

We also have the general impression that banks have a better handle on their credit risks than they did ten years ago. With more centralised credit management, banks can now aggregate exposures to clients and industries, a basic capability which was sadly lacking then. Some of the bigger banks have specialised units to monitor their property exposures. I also suspect that the corporate structures which contributed to problems in the late 1980s are less likely to be tolerated by lenders today.

This is all reassuring, but it is certainly no reason for complacency. There is little doubt that current lending standards are less stringent than they were a couple of years ago. Our observations during visits to banks support the market anecdotes on this.

There has been a clear narrowing in interest margins for big corporate borrowers and some relaxation in the loan covenants which apply. It is only a slight exaggeration to say that high quality corporate borrowers can virtually write their own terms and conditions; and some lenders are prepared to lend for very long terms at low margins. For lesser quality clients there appears to have been some drift back

toward negative pledge and interest-only lending.

The main reason for this is more intense competition among all banks as they strive to keep or build market share in an environment where it is also becoming easier for major corporates to tap debt markets directly.

At the smaller end of the market the signs of looser lending standards are less clear. We have, however, seen more facilities where requirements for personal guarantees have been relaxed. It is also possible that some of the regional banks might, in their eagerness to diversify loan portfolios, be lending to clients that major banks are turning away.

It is, of course, not possible to interpret all these trends unequivocally as indicators of unsound banking. And it would be unrealistic to expect impaired assets to stay as low as they are now. Credit quality necessarily ebbs and flows with the fortunes of the economy and particular sectors. What is important is that any deterioration is manageable against banks' capital, and that they recognise early the need for additional provisions.

On balance, we believe that some current lending practices do risk sowing the seeds of future credit quality problems for banks. Chief executives and boards should be considering carefully whether the additional point of market share that might be won now by lending to marginal propositions is worth the pain of future losses, the resources needed for loan workouts, and so on. They should also be alert to the possibility that the household sector might feature more strongly in the next upswing of losses. Household debt has increased a good deal more quickly than incomes in recent years.

The RBA recently organised a Credit Conference to review trends in credit risk management, with participants including a number of leading bankers and accountants. A volume of readings and a summary of discussion will be published soon.

The main theme from the Conference was how credit risk assessment and management are becoming more objective, more scientific. One speaker described this as moving from

an 'experience-centric' approach to 'data-centric' models.

With standard products such as mortgages, consumer loans, credit cards and (to some extent) small business loans, quite sophisticated statistical methods are beginning to be applied to estimating default risk. The aim is to see, from an analysis of history, which data are most helpful in predicting the probability of default. Such analysis produces 'scorecards' for use in processing loan requests.

Increasingly, consumer loans are being managed on a portfolio basis, with banks calculating expected losses for various broad product categories. Some are tracking the migration of loans through various stages of delinquency to help determine the proportion which will ultimately incur a loss. By updating the amounts at each stage, and adjusting migration rates in the light of current information, banks aim to measure more accurately the current risks in their portfolios.

At the 'bigger' end of the loan market, a lot of attention is being given to the accuracy and timeliness of risk-grading systems. To grade loans, the more sophisticated banks are now using complex statistical models based on financial information about borrowers or on equity prices. These feed into decisions about pricing, provisioning and portfolio balance.

Securitisation, the development of secondary markets and the use of credit derivatives are other facets of the more scientific management of credit risk.

These trends are, of course, to be encouraged. The new tools should not, however, be regarded as guarantees against unexpected credit problems.

For one thing, their usefulness depends critically on the quality and relevance of the historical information which goes into them. Most banks have detailed asset quality data for no more than a few years, covering not even one full credit cycle. Even where good data are available, it is uncertain how closely past relationships will hold for the future.

There would be dangers, therefore, if automated systems were used uncritically,

without an understanding of their limitations. Even when these models have been extensively road tested and their predictions assessed carefully, it is unlikely that they will do away with the need for overriding judgments about economic prospects and the outlook for particular industries and sectors.

On the other hand, the new techniques do provide an objective framework for decisions about pricing and capital allocation. While it would be foolish to rely blindly on them, it would be as dangerous if they were too easily overridden by competitive pressures. As another participant at our Conference asked: will banks be willing to forgo business that is apparently priced in line with the prevailing market just because a risk-based model indicates that it would dilute shareholder value? There is no doubt that such questions should be resolved at the highest levels in banks. They should not be left to business-driven relationship managers.

Needless to say, we will be keen observers of banks' lending practices over the next couple of years.

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## Interbank Settlement Risk and RTGS

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Naturally we in the RBA, like almost everyone else, would prefer not to contemplate the failure of a bank. But bank failures have happened from time to time in other countries – despite the best endeavours of managers and regulators. And it would be foolish to turn a blind eye to this possibility in Australia, because a bank failure is not only very damaging for the depositors immediately affected, but it can create a wave of problems flowing well beyond that particular institution. This flow-on damage can occur in various ways, including through effects on depositor confidence, but perhaps the most important channel is the payments system. If a bank in difficulty has large unsettled payment obligations to other banks, those banks will inevitably share some of the pain. There could then be further effects which cannot be predicted with any precision.

In the past Australian banks have not paid much attention to interbank settlement risk; indeed, they have had no way of monitoring their exposures to each other during the day. They operated on the presumption that, as long as they exchanged payments only with supervised banks, the central bank would 'sort out' a settlement problem in the unlikely event that one arose. This is hardly a sound basis on which to proceed – from either a commercial or a public policy viewpoint. It leaves individual banks potentially exposed to large losses which, because of the broader ramifications, tax payers might end up having to cover.

To achieve a more satisfactory position, Australia is now travelling the path of many other countries in introducing a real-time gross settlement – that is, RTGS – system for interbank payments made electronically.

Under RTGS, high-value payments will be settled continuously across banks' accounts with the RBA – rather than being accumulated, left hanging overnight and settled up in one hit the following morning. On an average day, payments exchanged among banks but not settled until the next day come to over \$90 billion. RTGS will, at the outset, eliminate about two-thirds of that overnight exposure. It will also give Australia a fully-fledged delivery-versus-payment system for transactions in debt securities.

With banks and other payments providers, the RBA began building the RTGS system in 1995. This has been a major undertaking – with a development cost across the industry of around \$120 million. The project is technically complex, but its biggest challenges have been reaching agreement on the architecture and rules for a system which all high-value payments providers will use on an equal and open basis.

Progress has not been rapid, or without occasional friction, but it has been steady. The key components of the system are now falling into place:

- last month, the RBA's central site – where interbank payments will be processed in real time – became available for testing by the industry;

- by early next month, this central site will be fully operational;
- by August, the industry's system for delivering payments to the central site using SWIFT messages should be tested and ready to use; and
- over subsequent months, high-value interbank payments will be moved progressively onto the new system, although ultimate settlement will, for the time being, still be the following morning.

Full implementation of RTGS is scheduled for April next year. Whether this is achieved now depends largely on the commitment of the industry, especially the major banks.

As we get closer to RTGS 'going live', more thought is being given to its practical implications for banks and their customers. Perhaps the most important of these is the daily management of liquidity.

With payments able to flow across banks' settlement accounts at the RBA only if the paying bank has sufficient funds, liquidity will clearly become more of an issue than it is now – when a bank needs only enough funds to extinguish any *net* obligation to others each morning. Under RTGS, banks will need to manage their liquidity more carefully or run the risk of being unable to send an important payment at the required time.

Banks are starting to give attention to this task – studying the patterns in their payment flows and upgrading their systems so they can monitor and manage flows on an aggregate basis across their business.

There will inevitably be implications for corporates in this. RTGS will cause banks to focus more sharply on the amount of credit extended to customers during the day. Because they will have to manage their own liquidity more closely on a real-time basis, banks will (understandably) want to control their customer exposures, and the demands which these place on liquidity, more tightly than before. Payment requests will have priorities attached. Corporates may need to negotiate facilities to ensure that time-critical payments will flow when they are expected by suppliers and counterparties. As a result,

some will no doubt choose to plan their payments and receipts more actively than in the past.

Our impression from recent discussions with corporate treasurers is that very few, if any, banks have yet done much talking to their customers about these issues.

More careful management of liquidity by banks and their customers will reduce the likelihood of payments 'gridlock' under RTGS. For its part, the RBA has taken various decisions aimed at ensuring adequate liquidity will be available, at a reasonable cost, across the system as a whole. We will enter into securities repurchase agreements with banks to provide them with intra-day funds at virtually no cost. We will allow banks to dip into their PAR assets for such transactions. The range of assets eligible for repos with the RBA has also just been expanded. Finally, as banker to the Commonwealth, we will use our control over government payments to inject funds early in the day.

It remains to be seen whether other devices will be needed to lubricate the system. In some places, such as the United Kingdom and Hong Kong, banks are required to send a minimum proportion of their payments early in the day to provide liquidity for the market. We will monitor flows to assess whether such 'affirmative action' is necessary in Australia.

It will, of course, be essential that most high-value payments are settled real-time when the new system is available. Anything less would defeat the purpose for which it is being built. There have been suggestions that some banks might by-pass RTGS by using lower cost (but higher risk) channels, such as the Direct Entry system which is designed for high volumes of small payments and settles on a net deferred basis. If this were to happen, we would have to consider what incentives or sanctions were needed to ensure that high-value payments travel along the RTGS path.

RTGS will not, of itself, remove the risks that banks incur in international payments – in particular, the risks arising from non-synchronisation of payments and receipts in foreign exchange transactions. Having RTGS

for domestic transactions is, however, a necessary step toward tackling this.

We're currently investigating the extent of Australian banks' settlement risks in their foreign exchange business. This is the next major frontier for risk reduction in banking.

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## Operational Risk and Year 2000

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As their business becomes more complex and diverse, banks are increasingly reliant on computers for information-processing and control. As a result, they are exposed to various kinds of operational risk.

For a bank active in derivatives trading, a breakdown in computer systems for even a relatively short time could be disastrous – preventing it from monitoring its changing market positions and disrupting its capacity to trade and to settle outstanding transactions. I recently heard a keen observer predict that the next big banking disaster would come from a (hypothetical) major international bank losing track of its derivatives positions for 24 hours.

To protect against such events, banks invest heavily in the integrity of their computer systems, as well as in back-up and disaster recovery facilities. The RBA is, of course, providing such back-up for the core of the RTGS system.

The Year 2000 problem poses a rather novel sort of operational risk because it is the result of past programming decisions which have produced the classic 'unintended consequence'. Basically, the risk is computer confusion and malfunction when the year identified in programming as '99' clicks over to '00'.

The upshot for Australian banks is the need to spend big sums on replacing or reprogramming their date-dependent computer systems. For the four majors alone, the total cost could be well over \$350 million.

As the calendar moves forward, the need to get on with addressing this problem becomes

more urgent. In the United States, Federal regulators have recommended that financial institutions complete all necessary reprogramming by the end of 1998 to allow time for thorough testing before January 2000. This will be needed because, in changing a lot of banking software, new bugs could be introduced along the way. More aggressive targets have been set for large banks where computer problems could do broad damage to the working of the financial system.

The RBA is currently seeking assurance that Australian banks are giving the Year 2000 problem the high priority it warrants. We

recently sent them a questionnaire asking each about progress in identifying the size of the problem for its operations, in drawing up a management program to fix it and in assigning the necessary resources. They should also be finding out what their major customers are doing about it.

Fixing the Year 2000 problem is not a glamorous task – but it is no less important for that.

In this respect, it is much like the challenge of managing banking risks generally.

Thank you. ✧