

Mr. Thompson considers the topic of risks in banking Speech by the Deputy Governor of the Reserve Bank of Australia, Mr. G.J. Thompson, at the Australian Institute of Banking and Finance Inc., New South Wales State Committee, in Sydney on 28/10/97.

Introduction

I spoke in June in Canberra to a joint luncheon meeting of the AIBF and two other local organisations. My theme was the many faces of risk in banking. Today I would like to expand on a couple of the risks I touched on then, namely:

the Year 2000 problem;

payments system risk, particularly in relation to settlement of foreign exchange transactions.

This also gives me the opportunity to talk about the results from two surveys recently conducted by the RBA.

Year 2000

I think almost everyone is now aware that the Year 2000 will bring not only the euphoria which accompanies the arrival of a new millennium - or the approach of it, for those holding on to the view that the third millennium starts in 2001. It also brings potentially major disruption to finance, commerce and almost every aspect of daily life if computers are not able properly to comprehend the move from the year programmed as '99' to the one shown as '00'.

Financial institutions are almost totally dependent on computer systems for their continuing day-to-day operations and getting dates correct is a critical element in this. They are, therefore, heavily at risk from the Year 2000 problem.

The RBA is taking a close interest in how this problem is being addressed, both as supervisor of banks (for the time being) and with our broader interest in the smooth running of the financial system.

The Basle Committee on Banking Supervision recently turned its attention to Year 2000 risk, and has issued a paper which includes a recommended program of remedial action for all banks. The main phases of this are:

- (i) developing a *strategic approach* to solving the problem;
- (ii) creating *organisational awareness* of its importance;
- (iii) assessing necessary actions and developing detailed *plans*;
- (iv) *renovating* systems, applications and equipment;
- (v) validating this renovation through *testing*; and
- (vi) *implementing* tested, compliant systems.

The well-prepared financial institution will have completed steps (i) to (iii). It will now be engaged in step (iv) -- renovating systems and applications. The recommended completion date for this work, to allow sufficient time for testing, is the end of 1998. The renovation of critical systems should be finished by the middle of 1998.

To assess the preparation of Australian banks for Year 2000, we asked them in May to complete a comprehensive survey. Some of the results from this can be summarised usefully under the first four headings of the Basle Committee's recommended program.

(i) Developing a strategy to tackle the problem: Some banks have been rather slow to do this, and several had not completed their strategies when our survey arrived. Some banks have placed the CEO or a director in charge of their project, while in others an IT staffer has responsibility. There are dangers in the latter course, because Year 2000 is big enough and threatening enough to be treated as a business issue and not simply a technical problem.

(ii) Creating organisational awareness: Awareness appears to be strong in IT areas, but it varies dramatically elsewhere. Some banks have (or will soon have) arranged training for all staff, incorporated Year 2000 into credit review procedures and made relationship managers responsible for compliance by customers. In contrast, others had not even arranged formal briefing of people in their non-IT areas who might be developing spreadsheets and small databases in blissful ignorance of the issue.

(iii) Assessing actions and developing detailed plans: Nearly half the banks had not completed their assessments at the time of our survey. This might reflect their adoption of an iterative approach, where key systems were identified early and compliance work begun, with minor systems the subject of later investigation. It also indicates, however, that a few banks are having trouble grappling with the problem.

(iv) Renovating systems, applications and equipment: Most banks are currently in this stage, but they have made only modest progress. At mid-year less than 10 per cent of the expected total cost of Year 2000 compliance -- of around \$600 million -- had been spent. (Although substantial, this figure is itself about 10 per cent of total expected IT expenditures between now and the end of the decade.)

The remaining two steps -- validation through testing and the implementing of tested, compliant systems -- are, of course, still ahead.

A few other observations are worth making from our survey results.

Most banks have adopted the end-1998 target for achieving Year 2000 compliance. Along with the Basle Committee, we regard this as highly desirable. A few banks have acknowledged that full compliance will not be achieved until some time in 1999. Some of these have structured their projects so that non-critical systems will be dealt with last.

Banks collectively have assigned over 1,000 in-house IT staff to fixing the problem, although this includes staff doing concurrent redevelopment work. There has been speculation about serious shortages of experienced staff, but nearly half of the banks in our survey did not plan to hire additional people for their projects, and only four expect to increase staffing by more than 10 per cent. Staff resources do not, therefore, appear to be a major issue in Australia, but there is no room for complacency because shortages could well be a bigger problem in other countries and we are part of a global labour market. Furthermore, the resources required for testing could be under-estimated. Year 2000 testing will be more complex, and on a larger scale, than anything attempted previously.

Many banks have not yet developed formal contingency plans in the event that systems cannot be made Year 2000 compliant. Only one-third of them have designed business resumption plans -- others are leaving that until closer to the day, in part because they expect that their systems may have altered substantially by then.

The overall picture on Australian banks' current state of preparation is, then, rather mixed. At this stage, they all appear capable of addressing their own Year 2000 problems in time. But most of the work is still to be done, and system developments of the scale required are notorious for running over budget and over time -- a luxury which is not available in this case. Moreover, the testing phase could well be the most resource-intensive. Compliance work could also be complicated by other distractions, such as preparing for the euro or managing mergers. (On the latter, the Basle Committee noted that the need to prepare for Year 2000 will greatly complicate mergers and acquisitions among financial institutions, and that the risks in trying to manage projects in more than one institution in the time available could be sufficient reason to defer such mergers.)

We will be monitoring the progress of the banks closely, and giving special attention to the laggards. (Although the lack of contingency and business resumption plans is not of current concern, we will also need to revisit this issue.)

Most of banks' compliance work to date has been focused *internally*, which is where our survey concentrated. This is only part of the challenge.

Successful renovation of its internal systems will not necessarily protect a bank from serious problems which may be imported from elsewhere, for instance through payments and trading linkages. Banks will need to co-operate closely to ensure that such *cross-institutional* links are fully tested. The new RTGS system for high-value payments -- on which I will say more in a moment -- was built with Year 2000 in mind. Even so, a comprehensive test plan has been developed for RTGS and its suitability is being confirmed with a number of system participants. This plan allows for full testing in conjunction with participants' interface systems, and aims to confirm that the RTGS system is Year 2000 compliant by the end of 1998. Meanwhile, the Australian Payments Clearing Association has formed a special Consultative Group to address issues relating to the other clearing systems.

Banks must also prepare for problems affecting their customers (as well as trading counterparties in wholesale markets) and should be inquiring into the Year 2000 readiness of their borrowers and potential borrowers. The effects of Year 2000 could severely interfere with the conduct of borrowers' businesses and reduce their capacity to meet loan obligations. Customers could also find themselves unable to use electronic links to their banks, and try to revert to manual processing. This would put considerable strain on banks' resources. If not well-prepared, banks could also be drawn into extensive legal actions flowing from Year 2000 breakdowns.

The RBA will continue to disseminate information about Year 2000 issues, and will help to co-ordinate renovation and testing where we can. We are participating in an Inter-bank Working Group which will aim to ensure that core banking systems and other shared infrastructure are fully tested, and that exposure to telecommunications problems are limited; to work with key vendors to ensure that their products conform to agreed compliance guidelines; and to develop contingency measures for critical areas. This Group will also be playing an education role with banks' business partners and customers.

Let me now describe briefly what the RBA is doing about its own house. Our target is to have our systems fully Year 2000 compliant by the end of next year. Our project is overseen by a Steering Group of senior officers.

While the scale of the challenge is not as great for us as for many other financial institutions, our technology platform is complex, involving a mix of hardware and software developed in-house and also provided by third-party suppliers. It encompasses the exchange of data and services with the Commonwealth Government, some State governments and the financial community at large -- banks, non-bank financial institutions, Austraclear and so on. We also have international linkages through SWIFT to our overseas offices and trading counterparties.

Our key internal systems run on the mainframe platform. So, this is where we focused our initial efforts. We began assessing and converting our mainframe application systems last year, with

the aim of flushing out and fixing date-related problems by end 1997. With one exception, which is now planned for completion in mid-1998, we are on target and have renovated, tested and re-implemented more than half of our systems.

To prove total compliance, these systems need to be tested on fully compliant platforms where the dates can be rolled forward into 2000. We aim to have compliant platforms by April next year, and to begin testing with financial institutions and our other counterparties and customers from July 1998.

We have also begun assessing our less critical PC and spreadsheet applications which have been developed and supported by various user areas. Each business/policy area has "ownership" of the renovation required for these systems, with support from the IT group. We plan to have these fully tested and proven clean by September 1998.

Another area of concern for all of us is the potential problems with embedded chips which control the operation of everything from lifts to air conditioning to fax machines. Our Facilities Management people began tackling this last year. Having assessed key equipment, they are now identifying the hidden components of building infrastructure which may have chips and so need to be assessed. Since many of these items cannot easily be tested internally, we will be seeking certification and proven test results from the vendors.

Settlement risk -- RTGS

Let me turn briefly to the RTGS project which, as you know, will allow high-value interbank payments to be settled on a "real time", pay-as-you-go basis from the first half of next year. This will eliminate a large proportion of the interbank settlement risk which currently arises because final settlement is deferred to the day after payments are processed.

Over the past six months, several major milestones have been achieved in the RTGS project, and now all of the basic infrastructure is in place:

The necessary enhancements to RITS (the Reserve Bank Information and Transfer System), which will form the core of RTGS, were completed early in July.

The SWIFT Payment Delivery System, which will send customer and foreign exchange payments for real-time settlement, went "live" at the end of August. Last week, this system carried an average daily volume of around 1,100 payments, with average daily value around \$13 billion. By the end of this month, we expect 16 banks will be using the system.

Austraclear commenced operations as a feeder system at the end of September, with settlement details of all interbank transactions through Austraclear now sent automatically to RITS.

Most transactions across these various systems continue to be settled on a next-day basis, but banks are now able to monitor continuously their exchange settlement account (ESA) balances and their net obligations to each other. Prior to full implementation, they will be able to test the queuing, repo and offset functions which will smooth liquidity management in the RTGS world.

This project, which represents a major advance in the sophistication of the Australian financial system, is now entering its final stages. Between November and January, payments between the major banks, which are now carried across RITS, will migrate to the SWIFT Payment Delivery System. Then, in February next year, the RBA will set a limit on each bank's consolidated ESA and "net interbank obligation" position. These limits will be reduced progressively to allow us all to adjust to the new environment. When they reach zero in April 1998, full RTGS will be operative.

Foreign exchange settlement

RTGS will eliminate settlement risk for high-value payments between domestic banks. Banks will remain exposed to foreign exchange settlement risk because the currencies in a foreign exchange transaction are each settled in a different "domestic" market. That makes synchronised payment-versus-payment extremely difficult because the respective payment systems are often in different time zones. Also, it is unlikely that both parties to the transaction are direct participants (with final settlement capacity) in each market. So correspondent banks were invented. The time taken for correspondent banks to carry out instructions and to notify their principals adds to settlement risk.

The exposure -- or amount at risk -- in a foreign exchange trade lasts from the time a payment instruction for the currency sold can no longer be cancelled unilaterally by a bank until the time the currency purchased is received with finality. And it equals the full amount of the currency purchased.

Although foreign exchange settlement risk first became a major concern with the failure of Bankhaus Herstatt in 1974, only in the past few years has a serious attack been made on the problem. The ball was set rolling by the New York Foreign Exchange Committee and the Committee on Payment and Settlement Systems of the Group of Ten Countries. (The most recent report by the latter is known as "the Allsopp Report"). Their work has done much to improve knowledge of the various components of foreign exchange settlement risk and to promote ways of reducing it. Significantly, these bodies have expressed a preference for the private sector to develop solutions, but have made it clear that central banks should encourage and monitor progress with this.

One finding of the Allsopp Report was that the magnitude of foreign exchange risk can be very large. To quote: "Given current practices, a bank's maximum FX settlement exposure could equal, or even surpass, the amount receivable for three days' worth of trades, so that at any point in time -- including weekends and public holidays -- the amount at risk to even a single counterparty could exceed a bank's capital."

Another finding was that banks can often reduce settlement risk through relatively simple changes in procedures -- for instance, by renegotiating arrangements with correspondent banks, and by making their own back offices more efficient.

More fundamental attacks on settlement risk have been through netting arrangements, both bilateral and multilateral, in which gross obligations are replaced with much smaller, netted amounts.

The most ambitious scheme is that developed by the "Group of Twenty" banks, which is known as Continuous Linked Settlement. Many of the details are still to be sorted out, but at the centre of this proposal is having a special-purpose bank as a member of the payment system of each of the currencies included in the scheme. Participating banks would hold individual currency accounts at this special bank, with settlement between them transacted across these accounts. Collateralising arrangements would avoid the creation of credit risk. With extended operating hours in some countries and access to domestic payments systems being on a real-time gross basis, payments by banks in different currencies into and out of the special purpose bank would be made with finality on a continuous basis. FX settlement risk would be eliminated.

Unfortunately, groups such as the G10 countries and the G20 banks do not have Australian representation, and their work has not encompassed either the Australian dollar or our market, despite their importance in global foreign exchange trading. Consequently, the RBA set out to replicate some of the international studies to get an idea of the dimensions of the FX risks incurred in Australia, and to identify any special features of the Australian dollar market.

We surveyed 24 bank and non-bank foreign exchange dealers during April this year, asking about their settlement practices and the volumes of transactions handled in different ways. It has taken longer than we had expected to analyse the results, but the reasons for the delay -- identifying and

rectifying errors in a large number of the completed questionnaires -- have been instructive in themselves.

Our analysis is still not complete, but we do have some preliminary observations. These impressions from the survey are not particularly comforting. On the other hand, they are also not out of line with overseas findings.

The first point is that many banks had considerable difficulty in even completing the survey -- surprisingly including some who had helped us design it.

Second, in many banks it took quite some time for our survey to find a "home", suggesting that they may not have one person (or group) charged with responsibility for FX settlement risk. Giving someone such "ownership" is considered best practice.

Many banks seem not to have a good feel for the size of their settlement risk. But it is clear that the magnitudes are huge. Aggregate daily trades of all currencies on the Australian market are probably at least as large as the \$90 billion exchanged each day through the domestic payments system.

Some banks seem to have a poor understanding of exactly when receipts become final in those countries which do not settle foreign exchange transactions in real time. There is some evidence of a "no news is good news" policy in respect of assuming settlements have occurred.

Finally, for even the major currency pairs traded out of Australia, the period of foreign exchange settlement risk (leaving aside weekends and holidays) frequently lasts for more than 24 hours. In some instances, it extends into a third day. For minor currency pairings, and taking into account the period for which a bank might not know whether a trade has been settled or not, it can be as long as 31 days! And remember that settlement risk which is not extinguished during the day it arises, cumulates with the risk incurred the following day.

It goes without saying that, in consultation with banks, we will be looking for considerable improvement in the management of FX settlement risk after the full results of our survey are compiled and published in the next month or so. On the positive side, we have seen some evidence of improvement already, as the survey has encouraged senior management to pay more attention to the subject. This is essential, because FX is clearly the next frontier of risk reduction in the payments system.

We also believe that it is of utmost importance to our banks, and to our financial system generally, that Australia's interests are fully represented in any proposed global solutions. We will be working with the Australian banks to achieve this.