

SUBMISSION TO THE
HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON BANKING, FINANCE
AND PUBLIC ADMINISTRATION

International Comparisons of Bank Margins



RESERVE BANK OF AUSTRALIA

August 1994

1. Introduction

1. Since the de-regulation of the banking system, considerable public interest has been shown in the subject of bank interest “margins” — that is, the difference between the rates at which banks lend funds and the rates at which they borrow.

2. For a time the main focus was on whether bank interest margins were rising or falling. This particular question was considered by the House of Representatives Standing Committee on Finance and Public Administration in 1991. The Committee’s Report (the Martin Report), concluded that there was no evidence of any widening in margins; if anything, there was a slight downward trend in the margin between the average interest rate charged for loans and the average interest rate paid on deposits. This conclusion was consistent with the views submitted to the Committee by the Bank.

3. More recently, the focus has shifted to how margins in Australia compare with those in other countries. As with many international comparisons, data limitations make this a difficult issue to resolve. In the Bank’s view, the two most quoted sources of international comparisons of bank margins — those by the OECD and Salomon Brothers, the US investment bank — are inadequate for this purpose.¹ The Bank has been sceptical about the prospects of compiling reasonably comparable international data on bank margins, even if considerable resources were devoted to the task. Given the interest in the topic, however, and the shortcomings in the existing data, the Bank agreed to a request from the House of Representatives Committee on Banking, Finance and Public Administration to try to compile some comparable data.

2. What are interest margins?

4. Banks have two main sources of income, namely net interest income and non-interest income. Net interest income is the difference between interest earned on loans and investments and interest paid on deposits and other interest-bearing liabilities. Non-interest income comprises fees and other charges and income from other activities such as trading of securities and foreign exchange. Total income — net interest income plus non-interest income — should over time cover costs and provide a reasonable return on capital if banks are to be viable.

(a) Average interest margins

5. Interest income results from banks charging more on their loans than they pay on their deposits. A number of measures of the average interest margin can be

constructed from regular returns submitted by banks in most countries. The dollar value of interest received and interest paid is published in profit and loss reports. The difference between these two items is net interest income. Relating this to a base of interest-earning assets provides a measure of the **net interest margin**:

$$\text{net interest margin} = \frac{\text{interest income} - \text{interest paid}}{\text{interest-earning assets}}$$

6. Another measure based on profit and loss and balance sheet information is the interest spread. The **interest spread** is the difference between the average interest rate earned on interest-earning assets and the average interest rate paid on interest-bearing deposits:

$$\text{interest spread} = \frac{\text{interest income}}{\text{interest-earning assets}} - \frac{\text{interest paid}}{\text{interest-bearing deposits}}$$

7. The net interest margin and interest spread are closely related. They will differ to the extent that banks have liabilities such as equity and non-interest-bearing deposits on which interest is not paid, and which cause interest-bearing deposits to differ from interest-earning assets. Because of the existence of these liabilities, the interest spread will usually be smaller than the net interest margin.² Where the non-interest-bearing liabilities consist mainly of equity, the difference between the measures will be small and the relationship over time will change only to the extent there is a change in banks’ gearing ratios. The difference between the measures will be larger if there are substantial non-interest-bearing deposits; in this case the spread will significantly underestimate the true difference between the average interest received and paid. For this reason, it is better to include non-interest-bearing deposits in the denominator of the ratio of interest paid. This “adjusted” interest spread is defined as follows:

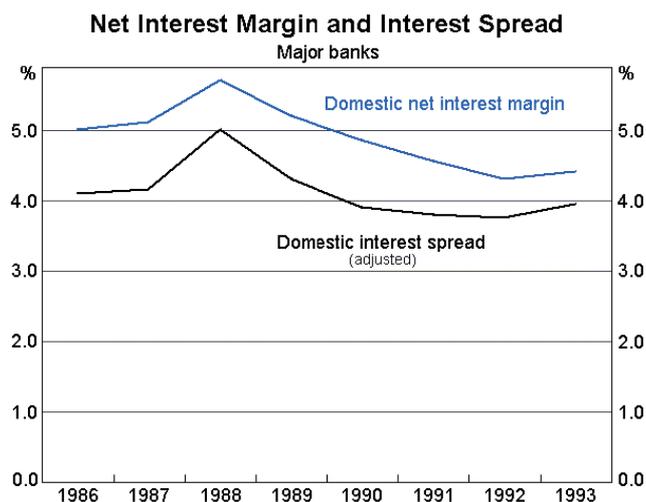
$$\text{adjusted interest spread} = \frac{\text{interest income}}{\text{interest-earning assets}} - \frac{\text{interest paid}}{\text{total deposits}}$$

8. Chart 1 shows the net interest margin and adjusted interest spread for the domestic operations (including non-bank subsidiaries) of the four major banks in Australia. As can be seen, the interest spread is lower than the net interest margin (for reasons noted above) but the two tend to move similarly.

1. The OECD collection contains a disclaimer that “international comparisons in the field of income and expenditure accounts of banks are particularly difficult due to considerable differences in OECD countries as regards structural and regulatory features of national banking systems, accounting rules and practices, and reporting methods”. The Salomon Brothers collection was contained in its publication “Bank Annual” until 1993; the international comparisons data were dropped from the 1994 edition.

2. The position is a little more complicated than this. Banks’ assets comprise interest earning assets and non-interest earning assets, with the latter including bills receivable, buildings and property and so on. Their liabilities comprise interest-bearing deposits, non-interest bearing deposits (where deposits include all debt liabilities), bill acceptances, other liabilities and equity. The relationship between interest-earning assets and interest-bearing deposits depends on the relative size of all of the other asset and liability items.

Chart 1



9. The data required to calculate the interest spread are not available in banks' published accounts in most OECD countries, so this measure cannot be used for international comparisons. The data required to calculate net interest margins are more widely available and the international comparisons in this paper are on this basis.

10. The presence of "non-accrual" loans — i.e. those loans on which interest payments have fallen into arrears — also affects measures of interest margins and interest spreads. In order to get a better handle on the margins or spreads that apply on banks' "good" loans — those that are paying interest in full — an adjustment should be made to correct for the interest forgone on non-accrual loans. While this can be done for Australia, data are not available to make accurate adjustments for other countries and so the comparisons in this paper generally do not take this adjustment into account. Where possible, however, the paper provides some indication of what the broad effects of differences in non-accrual loans would be.

(b) "Marginal" measures

11. Sometimes a representative loan rate and a representative deposit rate are compared, such as the gap between the business indicator lending rate and the overnight cash rate, or the gap between the mortgage rate and the rate paid on statement savings accounts. Because they only refer to one line of business, movements in these margins are not a good proxy for trends in overall profitability.

12. A similar approach is to compare a particular lending rate with a measure of the average cost of funds. This can give some idea of the return on a particular type of lending compared with another type, but to be meaningful it needs to be augmented by a measure of the risk associated with the different types of lending. For a given type of loan, e.g. variable rate home mortgage, it is, in principle at least, also possible to make some sort of international comparison in order to gauge the relative profitability of the product.³

For the purposes of this paper, however, the aim is not to pursue a product-by-product comparison, but to look at average margins in order to see what they imply about profits, costs and competition.

3. International Comparisons

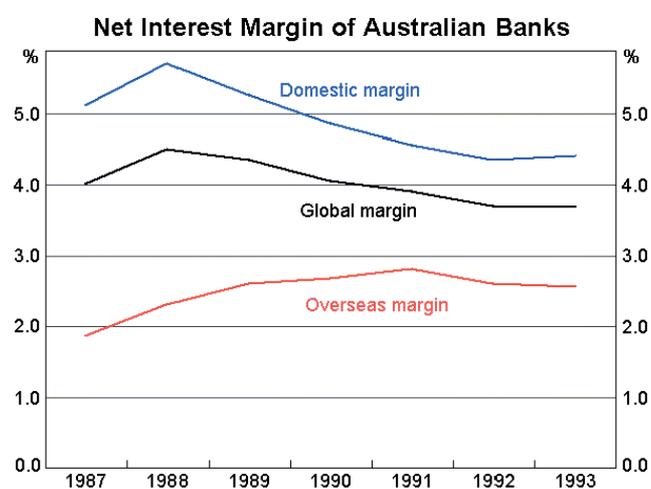
(a) Comparability problems

13. Lack of data comparability is the major reason why the Bank has treated the OECD and Salomon Brothers' comparisons with a good deal of caution. Appendix 1 details the characteristics of the data used in those two studies, and their lack of comparability; this section explains the problem in more general terms.

14. The core borrowing and lending activities for most banks, including Australian banks, are those undertaken in their domestic markets, through the banks themselves and sometimes through their domestic non-bank subsidiaries. Most banks have some offshore business conducted through branches of the parent bank or through subsidiaries. The offshore operations are often quite different from the core domestic activities, tending to be concentrated to a greater degree in wholesale financial markets where margins are fine. Chart 2 shows net interest margins for the four major Australian banks on their domestic and overseas businesses. The average margin on domestic business is about 2 percentage points higher than that on overseas business. Given these differences, measures of margins should, where possible, be confined to the domestic activities of the banks, excluding all offshore operations, as well as the activities of domestic subsidiaries. Unfortunately, banks generally do not publish the data necessary to calculate margins on the basis of the domestic operations of the bank.

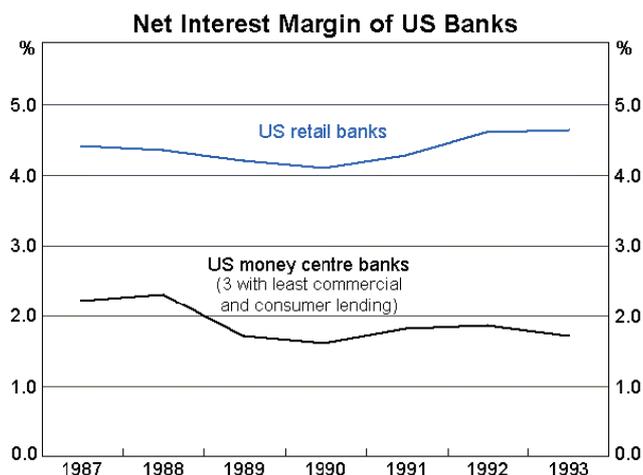
15. The figures used for Australian banks in this study are based on their domestic operations. Not all Australian banks publish detailed data on this basis — where data are not published, the Bank has obtained figures from banks

Chart 2



3. See B.W. Fraser, "Some Current Issues in Banking", Reserve Bank *Bulletin*, June 1994.

Chart 3



directly or, where that was not possible, it has derived estimates from the global and parent bank data. A similar domestic classification is used for the UK and Canada. For the US and New Zealand banks, global figures are used, but as these banks (apart from the Bank of New Zealand) have negligible overseas operations, this should not significantly distort the comparisons.

16. Information on domestic operations is not available for banks in European countries, which severely limits the extent to which banks in these countries can be compared with English-speaking countries. For this reason, and because of the substantial differences in the nature of business undertaken by banks in these countries, the focus here is on international comparisons of Australian banks and their counterparts in other English-speaking countries.

17. A second problem concerns the choice of banks to be included in the sample from each country. Banks are not all alike; some can operate quite profitably on very low margins while others have different mixes of business and require high margins to achieve the same degree of profitability. This is most clearly illustrated in the US where the large “money centre” banks, which rely almost exclusively on large wholesale business and income from fees, operate profitably at interest margins of less than 2 per cent, whereas full-service retail banks in the US normally require margins in excess of 4 per cent (Chart 3). If the sample of banks used for the US included money centre banks, interest margins would be biased downwards and could not be compared validly with figures for other countries derived from samples weighted more heavily to retail banks.

(b) Bank selection

18. This study has delved into individual bank figures to build up as comparable a body of data as possible (see Appendix 2 for details). Despite this substantial effort, however, the Bank is aware that significant and largely unavoidable difficulties remain, which preclude true comparability. We believe these data are about the best

that could be constructed but we do not believe that they are good enough to draw strong conclusions from small variations in margins.

19. The banks included in this study were chosen on the basis that they were representative of their domestic banking industries. In most countries the top four or five banks were selected. They are banks which have a significant presence in their home market, with a mix of business and household, plus securities investment/trading activities, and payment system obligations. In Australia the four major banks are used. In the UK it is the four “high street banks”, in New Zealand the four largest banks, and in Canada the largest five banks. For these countries, the banks chosen comprise at least two thirds of domestic banking assets. The choice of representative banks in the USA is more difficult because of the number of banks (12,000) and the diversity among them. In the end, the 40 largest banks, other than money centre banks, were selected; they comprise around one third of domestic banking assets. A full listing of the US banks included in this study is given in Appendix 3.

20. Another issue in compiling comparable data is the effect of differences in accounting conventions among countries. These are highlighted where banks are required to report their results according to different principles in different countries. Australian banks which raise funds from the public in the US, for example, are required to provide the US Securities and Exchange Commission with certain balance sheet and profit and loss items according to US Generally Accepted Accounting Principles (GAAP). Their annual reports show data for net profit/loss and equity according to both the Australian and GAAP standards. For 1993 the three major privately-owned major banks reported an after-tax profit of \$1.4 billion by Australian standards but a profit of \$1.1 billion according to US GAAP. Unfortunately it is not possible to rework the data published by banks according to a common accounting standard. This illustrates the point that not too much weight can be placed on small differences in measures of performance between countries.

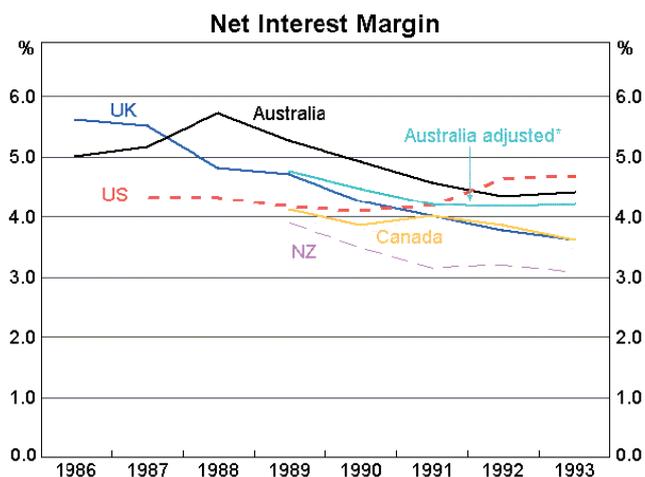
(c) Findings

(i) Interest margins

21. Net interest margins have fallen in most countries since the late 1980s, with the exception of the US where margins have risen in recent years (Chart 4). Margins in Australia increased significantly in 1988, reflecting a flight to bank deposits as safe haven investments after the stock market crash of October 1987, which acted to lower average deposit costs. They have fallen subsequently to levels below those in the second half of the 1980s.

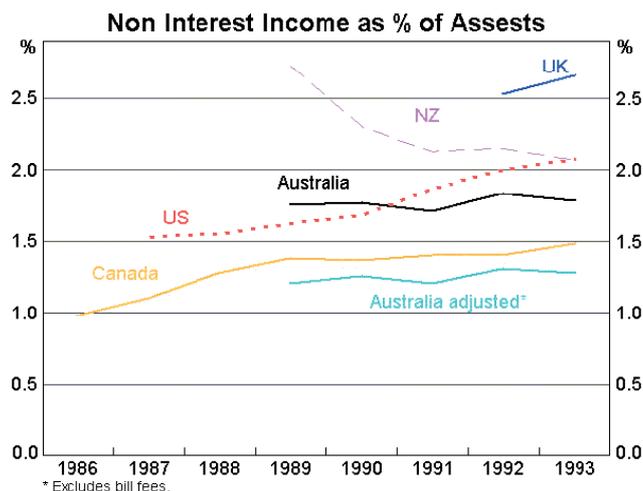
22. Banks in the US currently have the highest margins, estimated at 4.6 per cent in 1993. One factor contributing to higher net interest margins in recent years is that US banks have a lower proportion of non-accrual loans than banks in other English-speaking countries, although this effect cannot be quantified. Net margins in Australia are the next highest, at 4.4 per cent in 1993.

Chart 4



* Adjusted to include bill fees in interest income and bill acceptances in interest earning assets

Chart 5



* Excludes bill fees.

23. On this basis, margins in Australia appear high relative to countries with similar banking systems. Two factors, however, need to be taken into account in interpreting these figures. The first, which is discussed in the next section, concerns the relative significance of non-interest income in the different countries. The second concerns the relatively large role of bill acceptances in Australia.

24. A high proportion of business credit in Australia is provided by banks through acceptance of bills, which are then sold in the market.⁴ The income banks receive for this is treated as non-interest income (i.e. bill acceptance fees). As this form of finance substitutes for “low margin” lending business conducted by banks in other countries, a case can be made for treating these fees as interest income (and adding the stock of bank accepted bills held outside banks to interest-earning assets). The line labelled “Australia adjusted” on Chart 4 does this. The result is that the net interest margin for Australia moves closer to the levels in the UK and Canada.

(ii) Non-interest income

25. Comparisons of interest margins also need to take into account differences in the extent to which banks rely on interest income and non-interest income, such as fees and charges. Banks which recoup a lower portion of operating costs through fees may need to achieve relatively higher net interest income to maintain a comparable level of profitability. Chart 5 shows the ratio of non-interest income to total assets for banks in the countries covered in the study.

26. Most countries show a trend increase in the contribution of non-interest income to total income. This reflects the move towards user pays, or fee-for-service, pricing and the gradual diversification of business operations away from simple intermediation activities to trading in foreign exchange, securities and derivatives.

27. The country that appears to have gone against this trend is New Zealand, where non-interest income has been falling relative to assets. This has resulted from the reduction of non-core activities, as part of the intense rationalisation that has characterised banks in New Zealand, and downward pressure on fees. Despite the falls in recent years, the ratio of non-interest income to assets in New Zealand remains high compared with other countries.

28. Wide differences in the relative importance of non-interest income are evident among countries. Banks in the UK have the highest income from this source, followed by those in the US and New Zealand. Canadian banks are the lowest among the group, although the contribution of non-interest income has been gradually trending upwards. Australia lies around the middle. As noted earlier, fees on bank bills are an important source of income for Australian banks.⁵ They are traditionally treated as non-interest income but, as noted, they can be thought of as a de facto form of interest income. Consistent with the earlier adjustment that added bill fees into net interest margins, non-interest income can be adjusted to exclude bill fees. The Australian data in Chart 5 are shown both including and excluding bill fees. When they are excluded, the ratio of non-interest income to total assets in 1993 falls from 1.8 to 1.3, the lowest of the group.

4. This heavy use of bills reflects the effects of past regulations, which encouraged banks to provide finance in ways which were not funded by deposits.

5. Bill acceptances by the four Australian major banks total around \$55 billion, equivalent in value to about 20 per cent of domestic bank assets. Bills are not a common financing instrument in the US, comprising about 1 per cent of the assets of banks. In Canada, bills are more common, although they still comprise less than 4 per cent of the assets of banks. In the UK, bill acceptances are off balance sheet, but the market is small, with the total value of acceptances less than 2 per cent of total bank assets. In New Zealand, banks' use of bills varies — in 1992 ANZ had bill acceptances equal to 13 per cent of assets, although this fell to 7 per cent in 1993. BNZ and Westpac NZ had bills equal to 3 per cent of assets in 1993. The National Bank of NZ does not specifically identify bills in their balance sheet.

Table 1: Typical Fees on Interest Bearing Retail Accounts with Chequing Facilities

	Australia (A\$)	New Zealand (NZ\$)	Canada (C\$)	United States (US\$)	United Kingdom (£) (a)
Account keeping fee (per month)	1.50-2.00	2.00-5.00	1.00	2.50-12.00	1.75-2.50
Account balance to waive fees	300-500	1000-1500	1000	500-5000	n.a.
Transaction fees:					
- Withdrawal	0.30-0.50	0.15-0.40	0.50-1.25	0-0.50	0.46-0.77
- Deposit	none	0.15-0.40	none	none	0.32-0.77
Free transactions (per month)	7 to 15	5 to 8	0 to 2	unlimited if min. balance maintained	none

(a) Based on business cheque accounts.

Table 2: Typical First Mortgage Fees on Home Loans

Australia (A\$)	New Zealand (NZ\$)	United States (US\$)
\$500-\$600	1%	1% plus
	minimum \$200 maximum \$1200	documentation & appraisal fees of \$300-\$400

29. The low reliance on non-interest income in the case of Australian banks in part reflects low fees and charges. It is very difficult to compare fees and charges in different countries, given that each bank has its own pricing structure. We have, however, attempted to discern some general patterns on fees and charges for transactions and household loans. Examples of typical fees and charges are shown in Tables 1 and 2.

30. In Australia, for retail accounts with a chequing facility, the first seven to 15 transactions a month are typically free, after which withdrawal fees of A\$0.30 to A\$0.50 are applied; there are no fees on deposits. In New Zealand, fees are charged for both withdrawals and deposits (around NZ\$0.15 to NZ\$0.40), with the first five to eight transactions free. In Canada, a few banks offer a limited number of free transactions (for example, two per month or one for every C\$200 balance); otherwise, charges are around C\$0.50 to C\$1.25 for withdrawals. In the UK, banks tend to charge for both deposits and withdrawals, with fees of between £0.32 and £0.77. In

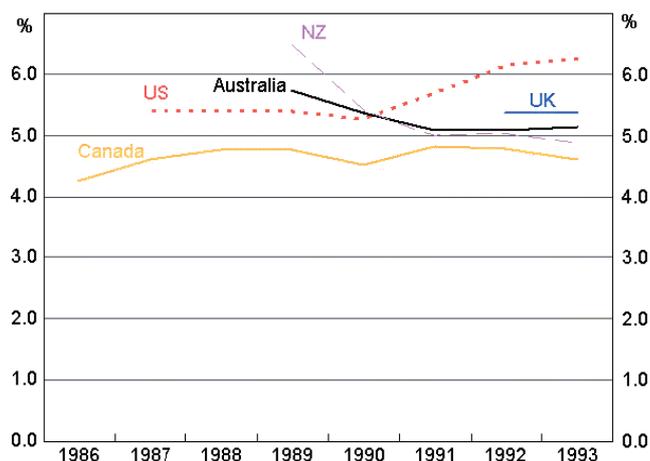
the US, some accounts have no transaction fees, although these accounts have high account keeping fees; on other accounts, standard fees on withdrawals seem to be between US\$0.10 and US\$0.50. Monthly account keeping fees are between A\$1.50 to A\$2.00 in Australia, a little higher than in Canada (a monthly charge of C\$1), but lower than in the UK (between £1.75 and £2.50), the US (between US\$2.50 and US\$12) and New Zealand (NZ\$2.00 to NZ\$5.00).

31. Banks often reduce or waive fees if the balance of the account is maintained above a specified minimum. In Australia, the typical minimum balance is A\$300 to A\$500 while in Canada it is around C\$1,000, and in the US between US\$500 and US\$5,000. In New Zealand, account maintenance fees, but not transaction fees, are waived for account balances above NZ\$1,000 to NZ\$1,500.

32. The upshot is that the thresholds of minimum balances and transaction frequency are most generous in Australia; on average, account holders with low balances and high transaction frequency pay lower fees in Australia.

33. Fees on housing loans also seem to be lower in Australia. Banks typically charge between A\$500 and A\$600 establishment fees for a housing loan; this includes application and legal fees but not government charges such as stamp duties. In the US, a 1 per cent origination fee is typically applied, with additional documentation and appraisal fees of US\$300 to US\$400; for the average Australian housing loan of A\$85,000, the US schedule of charges suggests fees of around US\$1,200. In New Zealand an establishment fee of around 1 per cent is levied, with an upper limit of around NZ\$1,200; if these fees were applied in Australia the charge on the average loan would be around A\$850. In most countries there are cases where fees are waived on selected products or for special promotions.

Chart 6
Total Income as % of Assets



(iii) Total income

34. Differences in the relative importance of interest income and non-interest income can be overcome by looking at the ratio of total income (that is, net interest income and non-interest income) to total assets, known as the total income margin (Chart 6). The ratio of total income to assets for Australian banks has been in the middle of the group over the past two years. The US has the highest total income margin, mainly reflecting both high interest margins and high non-interest income. As noted earlier, one reason for the high ratio in the US is the relatively lower drag on bank income from non-accrual loans in that country.

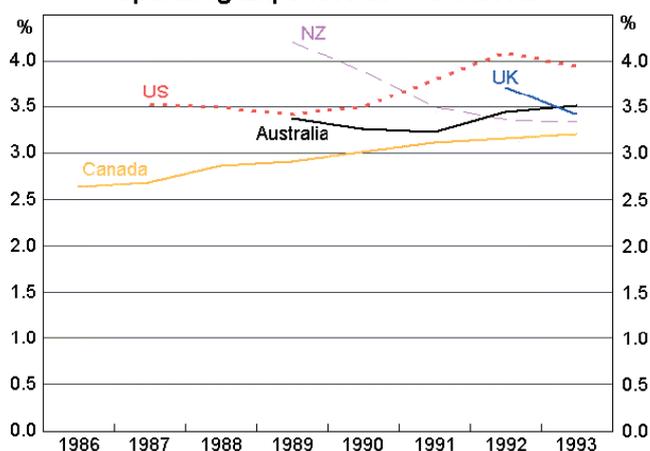
(iv) Costs

35. The cost efficiency of a bank can be measured by comparing operating expenses (i.e. total costs less the cost of funds, provisions for bad debts and interest forgone on non-accrual loans) to total assets. Chart 7 shows this measure of costs.

36. The ratio of operating expenses to assets in Australia has been broadly steady, although rising a little in 1992 and 1993, despite banks' attempts to contain costs over

Chart 7

Operating Expenses as % of Assets



this period. The sharp falling away in asset growth over these years ran ahead of banks' ability to cut back costs, in part because of the addition of restructuring costs associated with redundancies of staff. In 1993, the ratio was similar to that in the UK and New Zealand.

37. Operating expenses in the US are higher than in other countries, kicking up in the early 1990s. This rise has been attributed to increased off-balance sheet activity and costs associated with industry consolidation. In New Zealand the ratio of expenses to assets has steadily fallen since the late 1980s. Banks have been through a more intense restructuring than in Australia, including sharp reductions in branch numbers and bank mergers. Despite this fall, the ratio of costs to assets is still about the same as in Australia.

38. Canada has shown the lowest ratio throughout the period covered by this study. If the numbers are meaningful, they suggest a high degree of efficiency in what (like Australia) must be a difficult environment in which to achieve economies of scale in the provision of banking services (given the large size of the country and the small size of the population). The steady rise in the ratio is thought to reflect in part costs associated with expanding or establishing non-intermediation business operations, such as brokerage and foreign exchange, trust and mortgage loan operations, and investment management and corporate cash management services. These services do not necessarily add to the size of assets, so increases in them tend to raise the ratio of expenses (and non-interest income) to assets.

(v) Profitability

39. The usual approach to assessing profitability is to measure recorded net profits as a ratio of assets or shareholders' funds. Bank profits, however, can vary sharply from year to year, because of provisions for bad debts, and payment of taxes. A clearer guide to underlying profitability is provided by abstracting from the effects of provisions and taxes. Charts 8 through 11 show recorded net profits and underlying profits as ratios of both assets and shareholders' funds.

Chart 8

Profit After Tax as % of Assets

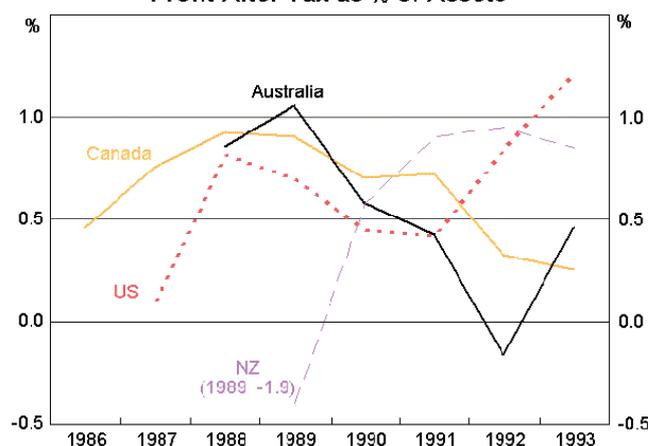
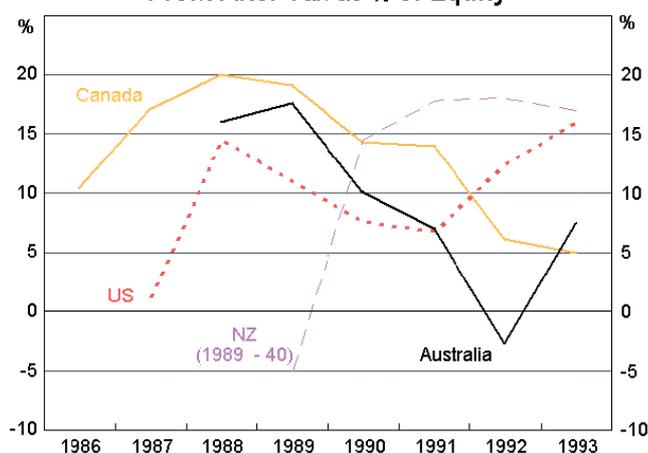


Chart 9
Profit After Tax as % of Equity



40. As can be seen, the measures based on profit after provisions and tax are particularly volatile. The degree of variability differs from country to country, in part because of differences in accounting and taxation regulations, but also because of differences in the bad debt experience. There is less variability once allowance is made for differences in taxation and loan loss provisions, and this measure provides a better guide to underlying profits.

41. The profitability of Australian banks in the late 1980s was higher than in the US, but not out of line with New Zealand or Canada. It fell in the early 1990s but recovered a little in 1993. The ranking of countries differs according to whether profits are measured in relation to assets or to equity. Measured in relation to assets, the profitability of Australian banks is in the middle of the countries in the study, but relative to equity it is at the bottom end.

4. Conclusion

42. The data compiled by the Bank cover roughly comparable banks in several countries, as opposed to the widely diversified banks lumped together in some publicly-available data bases. The data are still far from satisfactory, given the impracticability of standardising fully for the many differences in arrangements that exist among countries. Any conclusions drawn from the data should therefore be treated with considerable caution.

43. For what they are worth, the data suggest three broad conclusions so far as Australian banks are concerned:

- net interest margins tend to be relatively high;
- non-interest income tends to be relatively low; and
- overall income, costs and profitability tend to be broadly similar to those for comparable full-service banks in other countries.

44. The scope for interest margins to fall in Australia has been constrained because interest income has been used to subsidise under-priced services, in part reflecting strong consumer resistance to fee-for-service pricing. As competition increases and puts greater pressure on banks to raise fee income, this cross subsidisation is likely to diminish, lowering margins in the process. Over time, competitive pressures are likely to see Australian banks move to international benchmarks for both interest margins and non-interest income.

The Appendices to this submission are available separately from the RBA on request.

Chart 10
Operating Profit before Provisions & Tax as % of Assets

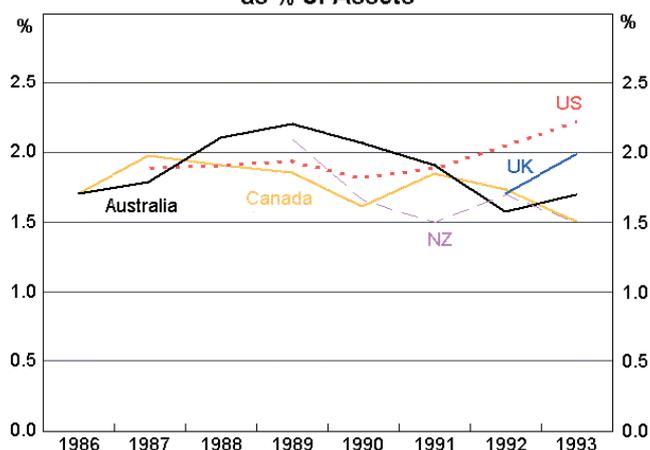


Chart 11
Operating Profit before Provisions & Tax as % of Equity

