

Profitability of Australian Banks: 1985-2001

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As with many other countries, the Australian banking industry has undergone a process of regulatory change over the past two decades. Prior to deregulation, Australian banks operated in one of the most heavily regulated environments and were amongst the most profitable in the OECD (Revell, 1980). Bank activity was constrained in a number of ways including: the imposition of Statutory Reserve Deposit requirements and Liquid Government Securities requirements; limits on interest rates banks could apply to both deposits and loans in addition to other qualitative and quantitative controls over lending; requirements for savings banks to hold 70 per cent of assets in the form of Commonwealth Government Securities; and controls over foreign exchange holdings and the exchange rate. There was also a restriction on the entry of foreign banks (Battelino and McMillan, 1989; Grenville, 1991; Harper, 1991; Milbourne and Cumberworth, 1991).

Both the banking industry itself and regulators considered regulations applied to the banking system to be inefficient. From the banking industry's point of view, regulation acted as an impediment to their ability to compete with non-bank financial institutions (NBFIs). However it did give banks a special privilege by allowing them to have monopoly access to domestic and international payments systems (Williams, 1998). Protected margins encouraged banks to engage in non-price competition including cross-subsidisation of the provision of payment services from their interest margins, a process both economically inefficient and inequitable. From the viewpoint of the Regulators, in an environment of increasing integration of world financial markets, the growth of banks' off-balance sheet activities, combined with the growth of non-bank financial institutions outside of the Reserve Bank of Australia's (RBA) regulatory control, impeded the RBA's ability to effectively implement monetary policy (Ackland and Harper, 1992; Harper, 1987; Grenville, 1991). Furthermore the fixed price system of selling government securities was inefficient.

The process of deregulation attempted to address these issues with a view to increasing competitiveness and efficiency of the financial system. From 1980-1984 interest rate controls over bank deposit and lending activities were removed, as were qualitative and quantitative controls over bank lending. This gave banks greater responsibility for the management of their balance sheets and led to an expansion in their activities with a change in emphasis from asset to liability management (Battelino and McMillan, 1989). The financial system was opened up to foreign banks with the granting of 16 new licences to foreign banks in 1985, 15 of which were taken up. The conversion of seven NBFIs to banks also

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bolstered bank numbers during the 1980s (Pope, 1994). During this period, open market operations switched to a tender system, the 'cash' rate replaced the bond rate as the focal point of monetary policy and the Australian dollar was floated giving the RBA greater control over domestic policy matters. The deregulatory process has continued during the 1990s with the most recent chapter being added as a result of the Financial System Inquiry (FSI, 1997). This inquiry resulted in changes to the regulatory regime, the most significant in this respect being the removal of prudential supervision of the banking system from the RBA, and the introduction of the Australian Prudential Regulation Authority as the overseer of prudential supervision of Authorised Deposit Taking Institutions.

As might be expected — given the significance of the policy changes — the anticipated and actual consequences of deregulation on bank performance have been the subject of much discussion and research (see, for example, Ackland and Harper, 1992; Battelino and McMillan, 1989; Edwards and Valentine, 1998; and Grenville, 1991). It was anticipated that deregulation should bring benefits to the banking industry and the public by increasing competition. Major gains could be made in the areas of allocative, technical and dynamic efficiency. Allocative efficiency would be achieved by the redirection of funds to their most productive use. Technical efficiency would be reflected in a reduction in bank margins as the intermediation process became more cost effective. It was hoped that increased competition would force banks to end cross subsidisation and price products closer to marginal cost for each service, including the imposition of new fees for all services provided. Dynamic efficiency would lead to financial innovation in terms of growth in product range and improvements in quality of service. These moves would be reflected by growth in non-interest income (Harper, 1991; Phelps, 1991; Pope, 1994). The increase in competition from new entrants as well the move to liability management however, was also expected to reduce profitability (Ackland and Harper, 1992; Harper and Scheit, 1992).

Studies have shown that contractions in interest margins were slow to occur (Crowley, Jeffs and Tennant, 1995; RBA, 1999), with no real decline experienced until the early 1990's. In addition, the narrowing of margins from the mid 1990s was not accompanied by a decline in profitability. Gizycki and Lowe (2000) highlight the apparent anomaly between increasing competition and a relatively constant return on equity during the late 1990s. To combat the squeezing of margins, cost reductions were achieved through the process of staff reductions and branch closures beginning in the late 1980s. This was followed in the 1990s with a shift of product mix away from traditional deposit taking areas into funds management and related areas (FSI Report, 1997; Goldsworthy, Lewis and Sheutrim, 2000). Gizycki and Lowe (2000) discussed this product diversification by banks as being driven not only by a compression of bank interest margins, but also by the ability of banks to use their brand power to cross-sell financial products. These activities have resulted in a change in the composition of banks' income, with a resultant increase in banks' fee income partially offsetting the fall in interest income. This is evidenced by a recent study showing that bank fee

income as a proportion of total income increased from 21 per cent of income in 1997 to 24 per cent in 2000 (RBA, 2001).

This paper examines the impact of deregulation on the performance of Australian banks. It extends earlier analyses by considering the role played by cost reductions and other improvements in efficiency on bank performance as well as investigating the contribution of non-interest income to profitability. Bank performance is explored through an empirical investigation of Australia's four major banks — Australia and New Zealand Banking Group (ANZ), Commonwealth Bank of Australia (CBA), National Australia Bank (NAB) and Westpac Banking Corporation (WBC) covering the time period 1985 to 2001. To gain insight into the impacts of financial deregulation, the behavioural responses of a larger number and wider range of financial institutions would be desirable. However, of the 50 banks currently operating in Australia, the four major banks account for 67 per cent of the market share of the banking sector, 'other Australian owned' banks make up 18 per cent with foreign owned banks accounting for the remaining market share (APRA, 2000). Hence the four major banks can be used as a reasonable proxy for the market, providing an indication of overall market trends within the banking sector. This research covers a longer timeframe than many previous studies, allowing a more comprehensive picture to emerge of the changes that have occurred due to deregulation.

Measuring Bank Profitability

Profitability can be measured in a number of ways including, return on assets, return on equity or profit margins. In this paper we focus on return on assets (ROA). ROA is the ratio of operating profit to average total assets. Operating profit is calculated as the difference between revenue and expenses. Banks' revenue is generated from interest income (iI) from bank loans and fee and other income (oI). Bank expenses are comprised of interest expenses (iE), operating expenses (oE) and provision for doubtful debts (PDD). Using this relationship and dividing both sides by average total assets gives:

$$\text{ROA} = [(iI + oI) - (iE + oE + PDD)]/A$$

This expression represents a 'before tax' ROA, avoiding any distortion in the data that may arise from differences in taxation treatments. Such differences are difficult to discover from data provided in the annual reports. An examination of the individual components of ROA enables analysis of emerging trends in overall bank performance. The difference between iI and iE as a proportion of assets gives the interest margin. Although economic theory emphasises analysis 'at the margin' as being more appropriate, due to data limitations, this paper has adopted the practice used by Milbourne and Cumberworth (1991) and used average interest margins. In calculating assets, data from bank annual reports has been condensed by removing items that appear on both sides of the balance sheet. This approach has been adopted in both Australian and international studies (for example,

Crowley, Jeffs and Tennant, 1995; Demirguc-Kunt and Huizinga, 1999; Milbourne and Cumberworth, 1991; and Saunders and Schumacher, 2000).

Analysis of Data

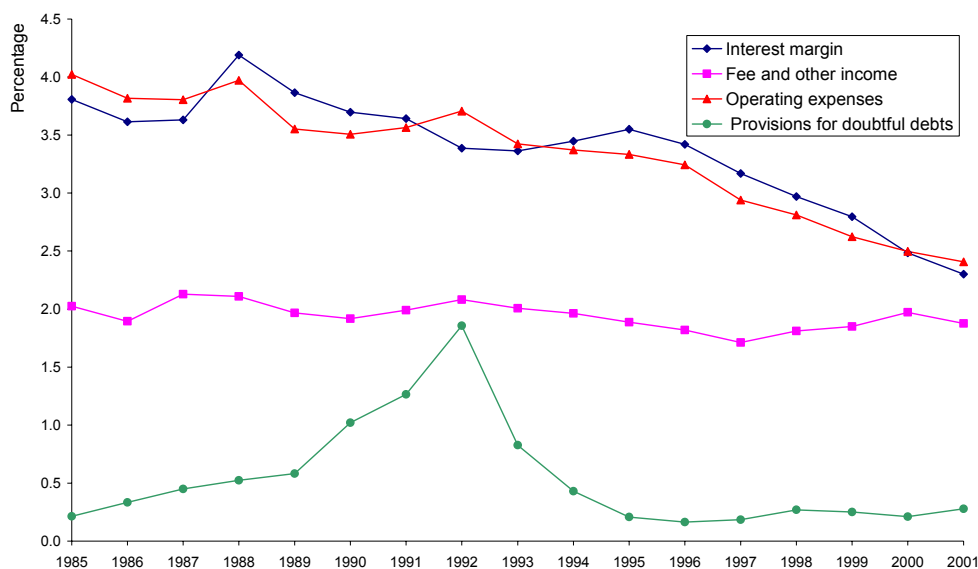
Interest Margin

In a competitive market a bank's interest margin is exogenously determined with variations attributable to factors such as entry of new competitors, disintermediation or re-intermediation of funds, and bank entry into new markets. Each of these factors has impacted on bank activity during the process of deregulation. Bank acquisition of competitors has also impacted on their margins, for example, the acquisition of the State Bank of Victoria by the CBA in 1991 and the acquisition of Challenge Bank by WBC in 1995. A narrowing of an individual bank's interest margin, in conjunction with a convergence in margins for the four banks, indicates an increase in the level of competition within the banking industry. A narrowing of margins indicates the passing on of efficiency gains to the public due to either an increase in interest rates paid on deposits and/or a reduction in interest rates charged on loans. Hence a narrowing of margins indicates gains made by either depositors, or borrowers, or both.

A trend towards a contraction in interest margins is evident from 1988 onwards, with this downward trend becoming stronger from 1995 (Figure 1). These findings support previous work by others including Milbourne and Cumberworth (1991) and the RBA (1999) that a contraction of bank margins was initially slow to occur.

Banks were able to maintain pre deregulation interest margins until increased competition in the mid 1990's forced them to end costly cross-subsidisation. It was not until the emergence of non-bank competitors, particularly in the home loan market, that the banks felt strong competitive pressures. Mortgage originators were able to capture almost 10 per cent of all housing loans by late 1995, forcing a reaction from banks (Gizycki and Lowe, 2000). The slowness with which interest margins fell and the absence of a strong convergence between banks during the period between 1988 and 1993 can be attributed to a number of factors. Firstly, there was a lack of real competition in the retail market during this period. Foreign entrants found it difficult to compete at the retail level due to the scale economies enjoyed by the 'big four' banks, as well as customer loyalty to these banks. As a result foreign banks tended to restrict their operations to the wholesale market (Milbourne and Cumberworth, 1991; Pope, 1994). Secondly, the high level of non-performing loans experienced in the late 1980s and early 1990s meant that the ability of the banks to operate on reduced margins was curtailed until bad debts could be brought under control. Competitive pressures were insufficient to force banks to reduce margins at a time when profits were being severely eroded due to a high level of loan losses. This high level of bad loans was not purely an Australian phenomenon with banks in many countries experiencing difficulties at this time (Tallman and Bharucha, 2000).

Figure 1: Banks' Income and Expenses as a Percentage of Total Assets or Total Liabilities



Fee and Other Income

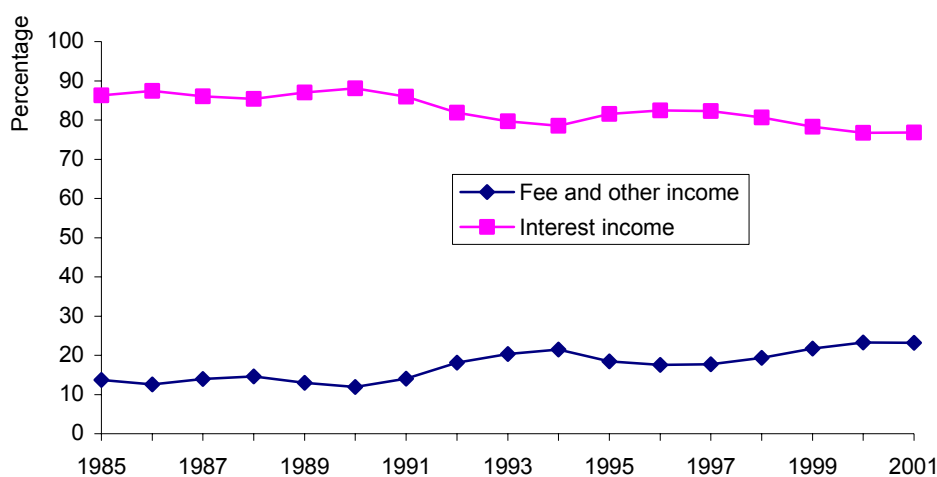
'Fee and other income' refers to non-interest income earned from various fees (loan fees, bank fees associated with bill issuance and guarantees, account keeping and transaction fees, service and management fees). It also includes other non-interest income such as foreign exchange income, rental income and profit from the sale of premises. While ventures into these areas are important sources of non-interest income to banks, it is the fees imposed on account servicing and transactions, which in recent times has generated most public debate. One outcome of this debate has been the RBA's 'Inquiry into Debit and Credit Card Fees' (RBA and Australian Competition and Consumer Commission, 2000). The policy of charging fees for services to counteract 'squeezing' of interest rate margins has increased especially in the later stages of the 1990s (PSA, 1995). Tripe (2000) indicated the difficulty of measuring the extent of this trend due to inconsistencies in reporting fee and other income in annual reports of banks, but concluded nevertheless that a comparison of the ratio of net interest income to total assets with the ratio of fee and other income to total assets provides a useful measure.

'Fee and other income' has remained relatively stable averaging two per cent over the entire period 1985-2001 (Figure 1). At first glance, this appears to reduce the credibility of complaints in the media of significant increases in fees and

charges imposed by banks. However ‘fee and other income’ reported here is measured as a ratio of fee and other income to total assets. All banks experienced significant growth in total assets, with growth accelerating from 1994 onwards. This asset growth has counteracted the growth in fee and other income. Fee and other income and total assets both grew at a rate of approximately 12 per cent over the period of the study. Hence, changes in fee and other income, measured as a ratio of total assets, do not show a clear contribution to any increases in profitability. A comparison of fee and other income and interest income as a proportion of total income, gives a different view of the increase in importance of fee and other income. This figure can also be misleading as changes in both fee and other income, and net interest income will alter the level of total income (Tripe, 2000).

Figure 2 clearly shows the decline in importance of interest income as a proportion of total income, and the relative increase in significance of fee and other income. Across the period 1985-2001, average total income grew at a rate of 8 per cent, net interest income increased at an annual average of 7.3 per cent, while fee and other income increased by 11.7 per cent. This clearly shows that non-interest income was a contributing factor enabling banks to maintain profitability even though margins were narrowing. However it should be noted that data collected by the RBA (2003) in its annual survey of fees earned by Australian banks’ indicated that although fee income has increased, it has not increased to the extent needed to fully offset the fall in interest margins.

Figure 2: Fee and Other Income and Interest Income as a Percentage of Total Income



Of concern to consumers is the perception that there has been a dramatic increase in fees applying to them. The banks' annual reports do not provide a breakdown of the proportion of fee and other income obtained from households and business, reporting only a total figure. However, there is some justification for this concern as highlighted recently by the RBA (2003:2). Banks fee income grew from \$4,073m in 1997 to \$7,808m in 2002. In 1997 banks received 70 per cent of these total fees from business and 30 per cent from households, while in 2002 the proportion received from households had increased to 35 per cent with business's share falling to 65 per cent.

During this period the annual percentage growth in household fee income outstripped that of business fee income. The RBA attributes this growth in fee income from households largely to an increased volume of lending and credit cards transactions. On an individual basis some households will have experienced a decline in the level of fees they have paid, while others are paying more. The actual amount paid depends largely on the types and frequency of transactions, types and number of accounts held, balances kept in accounts and payments methods used. In general those with low account balances making frequent transactions by non-electronic methods now pay much higher fees than they did in the mid 1990s.

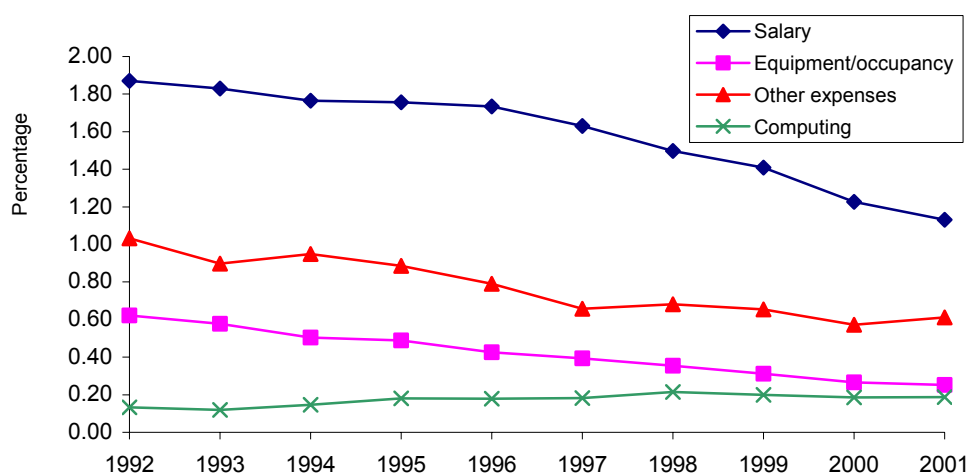
The main contributing factors for increases in business fee income came from the growth in merchant fees associated with credit and debit card transactions, which account for around one third of business sector fees. Small businesses contribute more to fee income associated with deposit accounts than large businesses, primarily due to the larger number of accounts held by small businesses (RBA, 2003).

In its 1995 report on the Social Responsibility of Banks, the PSA suggested that increased competition would increasingly force banks to use fee income to recover costs. However, the report argued that it would be difficult to determine whether the charges imposed were fair. The PSA argued that it was possible for banks to be self-regulating while remaining socially responsible. However if self-regulation did not produce the desired outcomes, then outside regulation could be imposed. In assessing the PSA's findings, Valentine (1995) and Waterhouse (1995) concluded that it was difficult for banks to construct a fee regime that would not disadvantage any consumer group. Any decision as to which group should be disadvantaged would be arbitrary in nature. They also questioned whether subsidising disadvantaged groups was the responsibility of banks or the government. The conclusions of Valentine and Waterhouse are supported by recent data, indicating that while some groups have benefited from changing fee structures imposed by banks, others have clearly suffered as noted above. This raises a dilemma for both banks and regulators. Any change in fee structures is bound to have adverse affects on some sections of the community increasing the difficulty of making policy decisions.

Operating Expenses

Operating expenses have shown an overall declining trend (Figure 1). To illustrate the main contributors to this reduction in overall expenses, the four broad components of operating expenses are shown in Figure 3. It is evident that significant reductions in operating expenses have been achieved through reductions in salary, equipment and occupancy and 'other' expenses.

Figure 3: Components of 'Operating Expenses' as a Percentage of Total Assets



The largest contributor to falling operating expenses is the reduction of salary expenses. As Table 1 shows, over the period 1992-2001, full time equivalent staff numbers have fallen greatly. The reduction in staff numbers has partly resulted from extensive branch closures. In addition, efficiency gains achieved in a number of areas, in particular, falling unit labour costs and productivity gains have lowered overall salary costs as a proportion of total assets. These are discussed below. Figure 3 also shows a slight upward trend in computing expenses. While initially adding to costs, the adoption of these technologies should lead to efficiency gains thereby reducing costs in the long run as this will provide banks with a service delivery mechanism enabling the provision of a wider range of services at lower cost. Evidence of efficiency gains attributable to technological innovation has been reported by Avkiran (2000) for Australian banks.

A comparison of operating expenses and the interest margin in Figure 1 highlights a close relationship between these variables. From 1995, onwards, the contraction in interest margins has been shadowed by a contraction in operating

expenses. It is only in 2000-2001 that the decline in the interest margin was greater than the decline in operating expenses. This decline in operating expenses is the main explanatory factor for the banks' ability to achieve and maintain improvements in their profit rates.

Table 1: Bank Branches and Staff Numbers Changes: 1992-2001

Year	Branches	Staff (full time equivalent)
1992	8,477	168,030
1993	8,316	159,872
1994	7,627	152,178
1995	7,258	150,624
1996	7,435	155,249
1997	6,775	148,403
1998	6,604	142,337
1999	6,273	136,542
2000	6,103	137,192
2001	5,357	129,532

Source: Bank Annual Reports

These results should, however, be interpreted with caution as using ratios of operating expenses to assets and interest margins to identify long run trends in efficiency and margins is not entirely appropriate when, as has occurred here, average asset growth and changes in the mix of business occur during the period. Phelps (1991) points out that these trends do not distinguish any variation in the cost of intermediation as the mix of services provided alters. Nor do they allow for a distinction between changes in payment system costs.

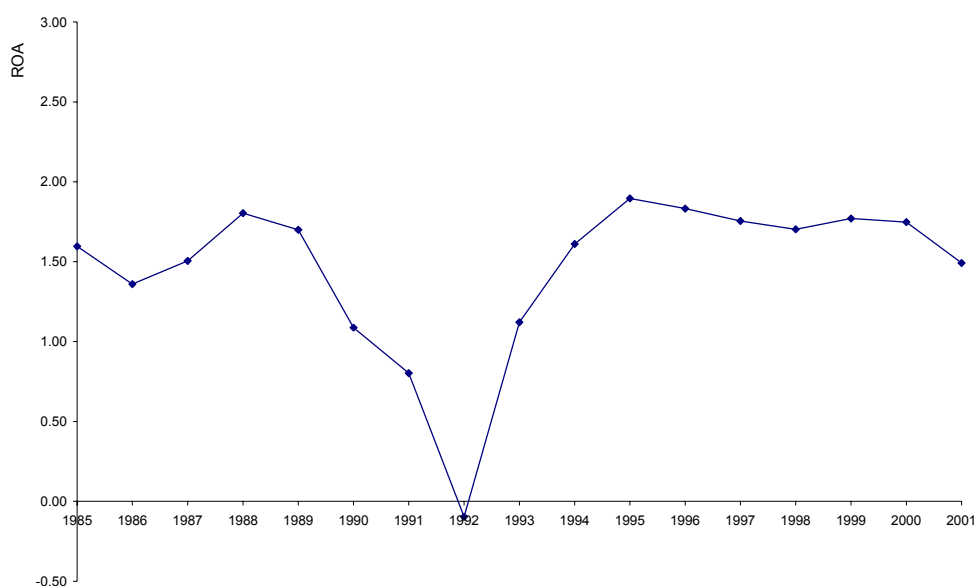
Provisions for Doubtful Debts

As a result of deregulation and increased competition, banks were forced to focus more actively on managing their liabilities. This meant a more proactive marketing of loans. Inexperience in adequately pricing and selecting loans resulted in an escalation of bad loans. Poor decision-making was compounded during the early 1980s as increases in asset prices fuelled an increase in lending to the commercial property market. Unfortunately the combination of global recession contributing to a reduction in the level of domestic economic activity,

and a sharp drop in asset prices during the late 1980s resulted in an unexpectedly high level of loan losses for the banks (Gizycki, 2001; Tallman and Bharucha, 2000).

The peak in PDD — occurring in 1992 (see Figure 1) — clearly explains the trough in the return on assets also experienced in that year as illustrated in Figure 4. Non-performing loans impact heavily on bank profitability. Banks must directly write off loan losses and increase provisioning for further expected losses. This also creates a ‘funding drag’ effect caused by the need to continue to fund loans at the market rate, unmatched by income from non-performing loans (RBA, 1993). It was not until these loan losses were brought under control that profit rates were able to recover. Despite banks’ exposure during the Asian crisis causing a slight rise in PDD levels and hence a reduction in ROA, the level of PDD has remained on average around 0.22 per cent across the period 1995-2001.

Figure 4: Return on Assets of Australia’s Major Banks



Return on Assets

The profit rate as measured by the return on assets is shown in Figure 4. A dramatic drop occurred between 1989 and 1994, when the profit rate fell to a low of negative 0.10 in 1992, before a recovery occurred. This drop in profitability is attributable to the heavy loan losses experienced by the banks. The slight downward trend in return on assets from 1995 onwards contrasts with the media

coverage — which refer to nominal dollar values — of reported increases in bank profitability in recent times. The sharper decline from 2000 to 2001 can be partly explained by the problems faced by NAB due to the failure of its American acquisition HomeSide, which resulted in a \$3.6 billion write-down, and also causing a decline in the profit rate (NAB, 2001:2).

Efficiency Gains by Banks

A decline in operating expenses as a proportion of total assets serves as a base indicator of the existence of efficiency gains. The ability of the banks to achieve reductions in operating expenses is directly related to their ability to achieve productivity gains and lower per unit labour costs.

Table 2: Bank Efficiency Gains, 1992 - 2001

Year	Labour productivity (\$m)	Unit labour costs	Operating expenses/assets
1992	1.9387	0.0187	0.0371
1993	2.1014	0.0183	0.0342
1994	2.1814	0.0177	0.0337
1995	2.2578	0.0176	0.0333
1996	2.3846	0.0173	0.0324
1997	2.7473	0.0163	0.0294
1998	3.2040	0.0150	0.0281
1999	3.6001	0.0141	0.0262
2000	4.1331	0.0123	0.0250
2001	4.9047	0.0113	0.0241

Source: Calculated using data from ABS Catalogue 6401.0 and Bank Annual Reports

Productivity gains are measured by labour productivity, which is calculated as real assets per employee. This has been derived by deflating aggregated total assets of the four banks by the consumer price index and then dividing this by the number of full time equivalent employees. Unit labour costs refer to the ratio of the real wage to labour productivity, where the real wage per employee has been calculated by deflating annual personnel expenses per employee by the CPI. Data commences in 1992, as prior to this not all banks recorded employee numbers in a similar fashion. Contributing to the fall in operating expenses (shown in Table 2)

is the reduction in both staff numbers and branches as illustrated in Table 1. From 1992 to 2001, full time equivalent staff numbers fell by 38,498. Over the same time period 3,120 branches were closed. Competitive pressures forced banks to adopt such extensive staff rationalisation and branch closures.

As can be seen from Table 2, the market recorded a consistent improvement in all of these measures of efficiency — labour productivity, unit labour costs and operating expenses (measured as a ratio of total assets). Unit labour costs and operating expenses both exhibit a declining trend. The annual average rate of decline for unit labour costs and operating expenses was 5.44 per cent and 4.68 per cent respectively. While efficiency gains have been made from falling labour costs and operating expenses, these are overshadowed by the much more significant gains in labour productivity amounting to an annual average gain of 10.86 per cent across the period.

Conclusion

This paper analyses several aspects related to bank performance in an era of deregulation covering a wider time frame than previous studies. Anticipated effects of deregulation on the banking industry included an increase in competition resulting in a reduction in net interest margins, product innovation, efficiency gains via cost reductions and an increase in non-interest income. An important conclusion of this paper is that the effects of major policy changes can take some time to emerge — the anticipated effects of deregulation have only been realised fully in the later stages of the 1990s. There has been an increase in competition as evidenced by a narrowing of bank margins. Banks have achieved significant reductions in their operating costs and improved labour productivity. Branch closures and staff reductions made a significant contribution to the reduction in banks' operating costs. There has also been substantial growth in the range of products available to customers. The move to charging fees for services provided is evidenced in the growth in fee and other income, indicating a reduction in the extent of cross subsidization. The increase in fee and other income, together with efficiency gains, has enabled banks to maintain profitability in recent years even though interest margins have declined.

In general banks are more efficient with gains flowing through to the public. However a general public perception still exists that efficiency measures adopted by the banks are not always desirable. This is especially true in relation to the impact of branch closures and staff reductions on communities and the imposition of fees, especially on those applied to services formerly provided free of charge. This study indicates that the increase in fee income is not borne equally by all sectors of the community; rather households and small business bear the greatest burden. Public calls for greater government controls over the banking system persist. However the determination of regulations governing the pricing regimes instituted by banks would be a difficult task. Whether or not such intervention by the government would be desirable is also debatable.

References

- Australia and New Zealand Banking Group (1984-2001), Annual Reports.
- Australian Bureau of Statistics (2002), *Consumer Price Index, Australia*, Canberra (Catalogue No. 6401.0).
- Ackland, R. and Harper, I. (1992), 'Financial Deregulation in Australia: Boon or Bane?', pp. 45-71 in P. Forsyth (ed.), *Microeconomic Reform in Australia*, Allen & Unwin, Sydney.
- Australian Prudential Regulatory Authority (2000), *Financial Institutions Report*, September Quarter.
- Avkiran, N. (2000), 'Rising Productivity of Australian Trading Banks Under Deregulation 1986-1995', *Journal of Economics and Finance* 24(2):122-140.
- Battelino, T. and McMillan, N. (1989), 'Deregulation and Changes in the Behaviour of Financial Intermediaries and Financial Aggregates', Reserve Bank of Australia, Discussion Paper No. 89-04, Sydney.
- Commonwealth Bank of Australia (1984- 2001), *Annual Reports*.
- Crowley, M., C. Jeffs and J. Tennant (1995), 'An Analytical Model of Financial Institutions', pp. 508-539 in *Proceedings of the 5th Australian Institute of Bankers, Banking and Finance Conference*, Melbourne, Australia, July 10-11
- Demirguc-Kunt, A. and H. Huizinga (1999), 'Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence', *The World Bank Economic Review* 13(2):379-408.
- Edwards, V. and T. Valentine (1998), 'From Napier to Wallis: Six Decades of Financial Inquiries', *The Economic Record* 74(226): 97-312.
- Financial System Inquiry (1997), *Financial System Inquiry Final Report*, Australian Government Publishing Service, Canberra.
- Gizycki, M. (2001), 'The Effect Of Macroeconomic Conditions on Banks' Risk and Profitability', Reserve Bank of Australia, Discussion Paper No. 2001-06, Sydney.
- Gizycki, M. and P. Lowe (2000), 'The Australian Financial System in the 1990s', pp. 180-215, in D. Gruen and S. Shrestha (eds), *The Australian Economy in the 1990's*, Reserve Bank of Australia, Sydney.
- Goldsworthy, B., D. Lewis, and G. Sheutrim (2000), 'APRA and the Financial System Inquiry', APRA, Working Paper No.3.
- Grenville, S. (1991), 'The Evolution of Financial Deregulation', pp. 3-35 in I. MacFarlane (ed.), *The Deregulation of Financial Intermediaries*, Reserve Bank of Australia, Sydney.
- Harper, I. (1991), 'Bank Deregulation in Australia: Choice and Diversity, Gainers and Losers', pp. 63-86 in I. MacFarlane (ed.), *The Deregulation of Financial Intermediaries*, Reserve Bank of Australia, Sydney.

- Harper, I. (1987), 'The Wallis Report: An Overview', *The Australian Economic Review* 30(3):288-300.
- Harper, I. and T. Scheit (1992), 'The effects of Financial Market Deregulation on Bank Risk and Profitability', *Australian Economic Papers* 31(59):260-271.
- Milbourne, R. and M. Cumberworth (1991), 'Australian Banking Performance in an Era of Deregulation', *Australian Economic Papers* 30(57):171-191
- National Australia Bank (1984- 2001), *Annual Reports*.
- Phelps, L. (1991), 'Competition, Profitability and Margins', pp. 87-110 in I. MacFarlane (ed.), *The Deregulation of Financial Intermediaries*, Reserve Bank of Australia, Sydney.
- Pope, D. (1994), 'Bank Deregulation in Historical Perspective', pp1-26 in M. Johnson, P. Kriesler and A. Owen (eds), *Issues in Australian Economics*, Allen and Unwin, Sydney.
- Prices Surveillance Authority (1995), 'The Social Responsibility of Banks', Discussion Paper No. 6.
- Reserve Bank of Australia (2003), 'Banking Fees in Australia', *Reserve Bank of Australia Bulletin* April:1-6.
- Reserve Bank of Australia (2001), 'Bank Fees in Australia', *Reserve Bank of Australia Bulletin* July:1-6.
- Reserve Bank of Australia (1999), 'Bank Fees in Australia', *Reserve Bank of Australia Bulletin* June:1-10.
- Reserve Bank of Australia (1993), 'Recent Developments in the Profitability and Capital Positions of Banks', *Reserve Bank of Australia Bulletin* January:10-13.
- Reserve Bank of Australia and Australian Competition and Consumer Commission (2000), 'Inquiry into Debit and Credit Card Schemes in Australia, A Study of Interchange Fees and Access', Reserve Bank of Australia, Sydney.
- Revell, J. (1980), *Costs and Margins in Banking: An International Survey*, OECD, Paris.
- Saunders, A. and L. Schumacher (2000), 'The Determinants of Bank Interest Rate Margins: An International Study', *Journal of International Money and Finance* 19:813-832.
- Tallman, E. and N. Bharucha (2000), 'Credit Crunch or What? Australian Banks During the 1986-1993 Credit Cycle', *Economic Review* 85(3):13-33.
- Tripe, D. (2000), 'Non Interest Income: Can Banks Do Better', *Journal of Banking and Financial Services* 114(2):10-14, 21
- Valentine, T. (1995), 'Some Commonsense on the Social Responsibility of Banks', in response to Prices Surveillance Authority (PSA) (1995), 'The Social Responsibility of Banks', Discussion Paper No. 6.

Waterhouse, M. (1995), 'Bank Fees, Competition and Social Responsibility', in response to Prices Surveillance Authority (PSA) (1995), 'The Social Responsibility of Banks', Discussion Paper No. 6.

Westpac Banking Corporation (1984- 2001), *Annual Reports*.

Williams, B. (1998), 'Factors Affecting the Performance of Foreign-owned Banks in Australia: A Cross-sectional Study', *Journal of Banking and Finance* 22:197-219.

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