

## **Credit losses and provisioning in New Zealand**

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## **Abstract**

This paper examines the reported credit loss and provisioning experience of a total of eight New Zealand banks since they started reporting such data in some meaningful way in the early to mid eighties. It first reviews both the background and major characteristic of each institution in the sample and then looks at their disclosure of credit risk related information in general and provisioning information in particular over the observation period. It elaborates on how banks account for doubtful debt and finally concludes with a first visual inspection of how loan losses correlate with the economic cycles and other micro- and macroeconomic variables. The paper should be considered as a first step in a project to research pattern and determinants of loan losses in New Zealand.

**Keywords:** Banks, Credit Risk, Loan Loss Provisions

## **Credit losses and provisioning in New Zealand**

### **Introduction**

Banks make charges against profits and reduce the value of loans recorded in their balance sheets when they have reason to believe that borrowers will default on those loans. Such loan-loss provisions are typically one of the first quantitative indicators of deterioration in loan quality and, at the same time, a key contributor to fluctuations in bank profits and capital. Understanding the determinants of provisions is therefore important for assessing fundamental credit risks in a particular market, or more general, the stability of a particular financial system. It comes therefore to no surprise that a large body of literature related to bad debt provisioning has emerged.

The strongest contributions in this research probably come from authors associated with banking supervisory authorities who need to understand patterns in and influences on loan loss provisions. The most recent one would be a Bank of England working paper (Pain 2003) who used panel regression analysis to investigate factors that may lead to increases in loan-loss provisions for a sample eleven major UK banks. He found that there are indeed a number of macroeconomic variables that can inform about banks' provisioning requirements, in particular real GDP growth, real interest rates and lagged aggregate lending growth. A couple of years before, BIS researchers Borio et al. (2001, p.12, 17) in their comprehensive review of issues related to the procyclicality of the financial system had touched on loan loss provisioning. They documented that bank provisions are one of the most procyclical variables, being highly negatively correlated with the business cycles. Low (Excessive) provisioning in good (bad) times then translates into a clear procyclical pattern in bank profitability. Another study by Fernández

de Lis et al. (2000) reviewed loan growth and provisioning in the Spanish market. It also presented the Central Bank of Spain's approach to counteracting procyclical provisioning behavior. The bank had introduced a so-called statistical provisioning regime aimed at proper recognition of forward looking, i.e. ex ante credit risk. Indeed the conflicting perspectives of what constitutes proper provisioning has been a subject to much debate, not the least in view of the introduction of the New Basel Capital Accord (BIS 2003) which served to focus attention on respective roles of provisions and capital in protecting a bank from credit losses. Borio and Lowe (2001) bring these discrepancies to light when they discuss a number of regulatory initiatives of accounting, respectively banking supervisory authorities. While accounting principles stress provisions to generate true and fair loan valuations, prudential banking regulation tend to emphasize the role of provisions as buffers against future deterioration in credit quality.

Bank provisions have also been of interest to researcher in other, perhaps more academic fields. Some explore the discretionary nature of providing for loan losses. Lobo and Yang (2001) summarize the literature in this area, mainly regarding the four major motivations by bank managers to provide for loan losses: signaling, income smoothing, capital management and tax management. Another line of research adopts an agency approach to bank loan provisioning. Kim and Santomero (1993), for instance, found that with symmetric information rational managers would use bank provisions for income smoothing. This is the starting point for Cavallo and Majnoni (2001) who argue that the amount of legal protection granted to firm's outsiders affects the allocation of a bank's earnings to provisions, income taxes and dividends. In the presence of asymmetrical information and related agency costs they thus expect reduced income smoothing which means inadequate provisioning in upturns and excessive provisioning in

downturns. Their conjecture is, however, only partially supported by a sample of G10 and non-G10 banking institutions.

This wide application of bad debt provision data for both in both bank regulatory and academic research illustrates its significance yet such data have not yet been compiled for the New Zealand banking market in a systematic way. This paper thus presents a first review of a comprehensive collection of loan loss provision information as well as related debt write-off and recoveries for a total of eight larger New Zealand banks. The series stretches back to the early eighties when some banks started disclosing such information in their published accounts. The characteristics and contents of the sample are presented in the next two sections. This is followed by an account on how banks operating in New Zealand have been disclosing credit risk related information in general and how they account for loan losses. The paper concludes with a first visual inspection of how provisioning for loan losses have correlated with the economic cycles and other micro- and macroeconomic variables.

### **Discussion of Data Source and Profile of Banks in the Sample**

This paper presents financial and in particular loan loss data collected from annual reports of a total of eight New Zealand based banks covering a time period of the early eighties<sup>1</sup> to the 2002 reporting year. Five of these institutions still operate in the NZ banking market while three have in the meantime been merged into larger entities. This does not consider the recent change of ownership at National Bank (NBNZ) which may eventually see it united with ANZ's New Zealand operations. It is not the purpose of this section to provide a comprehensive history

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<sup>1</sup> For ANZ and National Bank even earlier bad debt provision data were available.

of banks operating in New Zealand but it is nevertheless important to talk about the roots of each of the institutions covered in the study. This especially helps better understand the availability or rather lack of certain data. Accordingly, the following two subsections review two classes of institutions. In the first group are institutions that had been operating as commercial banks before the onset of deregulation of the financial system in the mid-1980s. The second group consists of banks that have been formed as a result of the 1987 framework for bank registration and supervision. They all have, respectively had their roots in mutually owned financial institutions such as building societies, trust and savings banks. A final subsection discusses Rural Bank as a special case and reviews which data have not been included in the current study. In summary, the following account is supported by a simplified visualization of New Zealand banking history since 1980 shown in Appendix 1.

#### *Financial Institutions with Roots in Commercial Banking*

The most complete set of data could be retrieved from NBNZ and ANZ, two commercial banks with a long history in the New Zealand market. While NBNZ has always been a stand-alone entity, ANZ's New Zealand operations became a separate legal and reporting entity only in 1977. Both banks have long been and still are controlled by overseas interests. UK based Lloyds Bank has been majority and later sole shareholder in NBNZ. Accordingly, NBNZ switched from UK£ to NZ\$ based financial reporting in 1979 only. ANZ is an Australia based international banking conglomerate and its NZ operations had 25% minority shareholders until the Australian parent bought them out in 1986.

Westpac is another of the commercial banks with a very long history in New Zealand. It was founded 1817 in Australia as Bank of New South Whales and later expanded its operations

to New Zealand. The name Westpac was devised in 1982 when Bank of New South Wales merged with Commercial Bank of Australia, another Australian institution with strong representation in the New Zealand market. Westpac operates in New Zealand merely as a branch of its Australian parent and not as a separate registered bank. This has made it difficult to obtain any specific financial data on its New Zealand operations before it was required to disclose such pro-forma information in 1996. Accordingly, no pre-1996 data could be considered in this study.

Bank of New Zealand (BNZ) also has its roots in commercial banking but as early as in the late 19<sup>th</sup> century the government became involved when credit losses required it to bail out BNZ for the first time in its history. Ever since then the New Zealand government had a dominant influence on this institution and it had been nationalized for many decades before the financial sector reforms started in the mid 1980. At that point an ambitious team of directors assumed management responsibility with the obvious aim to turn BNZ into a global player. Sizeable losses, for the most part caused by its international merchant banking operations, lead to huge losses in 1989, just two years after an initial 25% of BNZ had been placed to private investors. The NZ government subsequently decided to transfer the troubled portion of the BNZ loan portfolio to a special entity and recapitalized the remaining BNZ operation over the course of the following three years. Finally in 1993, BNZ was sold to National Australia Bank (NAB), one of the leading Australian banking groups. NAB has now been operating BNZ as an independent entity over the past decade. To a certain extent, BNZ's changes in ownership are also reflected in its financial disclosure. In the early 1980ties, at the beginning of the observation period, BNZ would rather report like a public sector entity, emphasizing its role for the good of the New Zealand economy. Only when it was partially floated in 1987, disclosure became more in line with privately owned banks accountable to their shareholders.

### *Financial Institutions with Roots in Cooperative Banking*

ASB, Trustbank and Countywide Bank are three institutions that have their roots in the previously very fragmented cooperative banking sector which was regulated by a myriad of statutes. They all decided to corporize and seek bank registration in the late 1980s which meant changing their ownership relationships and legal structure. As limited liability companies they subsequently found it easier to raise capital to finance their growth. At the same time, they could now compete head on with the established banks after the statutory protection of their original business activity had vanished.

ASB, established in 1847 as Auckland Savings Bank, had been a community savings bank in the Auckland area. It had started extending its reach to other parts of the country when it was corporized in 1989. Ownership was first transferred to the charitable ASB Bank Community Trust but in the same year Commonwealth Bank of Australia (CBA) acquired a controlling 75% stake in the institution. CBA finally bought out the community trust in late 2000 to become sole shareholder. To develop into one of the five leading banks in New Zealand, ASB has mostly relied on internal growth as opposed to taking over other banks; the 1990 acquisition of the small Nelson based Westland Bank being the only notable exception. Given its history, meaningful disclosure of selected credit loss related information only became available in 1987.

Trustbank was an institution that had directly been formed as a result of financial sector reform when eight regional trust banks joined forces in 1988 to form Trust Bank Group (Trustbank). While an increasing number of services were centralized into this new entity, Trustbank remained a very loose cooperation with its members remaining independently owned legal entities. New members joined later but others like Taranaki Savings Bank (TSB) left the

group to follow their independent path. Only in April 95 the member banks were formally amalgamated into one unit but this was just one year before Trustbank was sold to and merged into Westpac (May 1996). Westpac even started using “WestpacTrust” as its official bank name in New Zealand until it reverted back to the original Westpac brand in 2002.

Cooperative Countrywide Building Society became a registered bank in 1988 when it also changed its name to Countrywide Bank (Countrywide). At the same time, the bank was publicly listed with members of the former building society allocated 40% of the shares while UK based Royal Bank of Scotland (40%) and General Accident Insurance Company (20%) became the dominant shareholders. Royal Bank of Scotland eventually bought out General Accident Insurance Company and when Countrywide had to finance the acquisition of United Bank (formerly United Building Society), the UK bank took its stake to 100% in 1992. In 1998 finally, the bank was sold to and integrated into National Bank.

#### *Other Institutions in Sample and Missing Data*

Rural Bank has not been discussed so far. It had originally been set up as a rural development bank after World War II to promote agricultural land use in New Zealand. When the new Labour government of the eighties gave it the direction to become a stand-alone bank, not relying on government subsidized loans, it turned into a registered bank. Given that its customer base was very narrow and much of its loan portfolio was initially not lent at commercial terms, its short existence in a liberalized market does not surprise. In 1990 the government sold it to the Fletcher Challenge Group but just two years later it was integrated into National Bank. This is a partial reason why National Bank still is the leading lender to the rural sector in New Zealand.

In order to avoid a survivor's bias, the data set should ideally encompass all banks operating during the observation period. There are indeed some small gaps in the data, some of which might be closed in later versions of this paper. Still, it is the assessment of the author that the data gathered so far mirror the bulk of lending in New Zealand over the past 20 years, respectively they show an unbiased representation of the collective loan portfolio advanced to New Zealand residents, business and public sector.

The most notable gap has been discussed above. It is the lack of data for Westpac's New Zealand operations before 1996 because it is operating as branch of its Australian parent only. Furthermore, data are missing for the following banking institutions:

- Government-owned Post Office Bank which was acquired and absorbed by ANZ in October 1992. This institution had the character of a savings bank.
- United Bank, formerly United Building Society, which was taken over by Countrywide Bank in 1992 which in turn became part of National Bank.
- Taranaki Savings Bank (TSB) which is comparably small.
- Government-owned KiwiBank which has just been set up and only one full year of data are available.
- Various smaller registered subsidiaries of overseas banks like Dutch owned Rabobank or recently established "Superbank", a subsidiary of Australian St. George Bank.

We finally have to mention the lack of data on savings institutions and finance companies in the sample. Indeed this "semi-bank" sector has been growing more rapidly over the past few year but the New Zealand financial system is still dominated by registered banks who own well over 90% of all deposit-taking institutions (KPMG 2003). RBNZ analyst Thorp

(2003) provides a good overview of these deposit-taking institutions. He highlights the fact that some of the larger of these institutions like Southland Building Society or PSIS maintain nationwide networks. They effectively offer a full range of banking services. A major obstacle for exploring credit losses that have occurred at such institutions would also be the lack of disclosure standards as they are enforced by the RBNZ for registered banks. Finance companies in particular just report under the less stringent disclosure regime of the securities act.

### **Adjustment of Time Scale and Reporting Intervals for Empirical Analysis**

As mentioned, data for this study have been collected from banks' published annual accounts yet there is no standard balance sheet date across the sample. Reporting periods ending February, March, June, September, October and December occur in the sample. Moreover, some banks have altered their reporting periods, typically to have it coincide with the one of a new owner.

It is obvious that annual data reported for the end of February should not be compared to data per December of the same year reported by another bank as these two periods would overlap by just two months. For the purpose of this study, the following simple method was applied to adjust the data: Any reporting period ending before June is considered as data reported for the previous calendar year. More sophisticated methods could also be considered which, for instance, would allocate expense items on a pro-rata basis to each calendar year. While such methods could be considered in a later version of this paper, the easy approach chosen here has the advantage that it uses actually reported data.

As to the change in reporting periods, this has affected not less than five banks in the sample of eight. Firstly, Bank of New Zealand (NAB) moved its reporting date from March to September in 1993 when acquired by National Australia Bank. With the data adjustment method described above, this meant no data could actually be categorized as 1992 calendar year data since items per 31 March 1992 were considered as 1991 data and items per 30 September 1993 as 1993 data. This gap was filled by simply averaging the 1991 and 1993 balance sheet items (arithmetic mean). Calculations and ratios using income statement items like bad debt expense considered the fact that these actually covered an 18-month period, i.e. these items were divided by a factor of 1.5.

Similarly, ASB Bank then called Auckland Savings Bank moved its reporting date from March to June in 1988/89 when it was corporized and Commonwealth Bank of Australia took a controlling stake. This meant 1988 data were now missing for the reason described under BNZ above.

Next, National Bank moved its reporting from October to December in 1984 and Countrywide Bank, later amalgamated into National Bank, moved its year end in two steps first from June to December (1992) and then on to February (1995) to match the balance sheet date of the then controlling stakeholder Royal Bank of Scotland. Finally, Rural Bank moved its reporting from March to June when the Fletcher Challenge conglomerate took control in 1990.

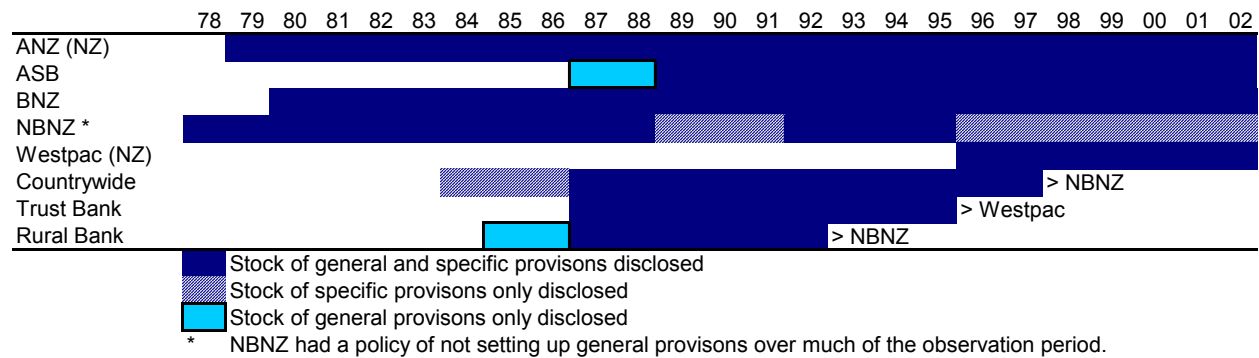
## **Disclosure of Loan Loss and Other Credit Risk Related Information for New Zealand Banks**

Early bank financial statements had limited information with regard to their inherent credit risks. Loans were shown net of any provisions and the profit and loss statement (P&L), called statement of financial performance in Australasia, did not break out bad debt expense. Rather it would simply deduct it off total revenues which themselves were not specific as to interest and non-interest component. A preliminary review of some historical bank annual reports back to the late 19<sup>th</sup> century revealed that this basic reporting structure had not changed until banks like NBNZ started disclosing information on bad debt provisioning in 1978. Research that would attempt to glean further information on credit losses over historical periods would probably have to rely on indirect methods such as inferring credit losses from the banks' profitability. Another possibility provide bank archives that might contain internally reported information.

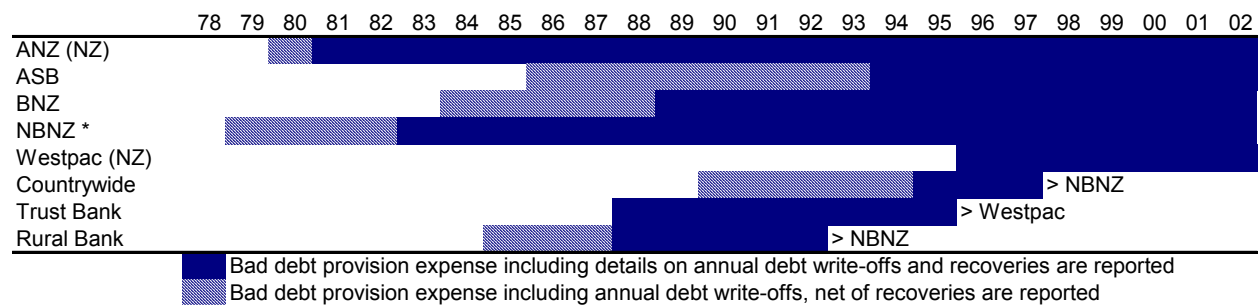
Standards on financial reporting by financial institutions in New Zealand are currently set by FRS-33 (ICANZ 1997). These include rule and criteria for debt provisioning and on how to show credit risk related information. The standard has, however, come into force only in 1997 but as indicated above, banks started disclosing information on bad debt provisioning much earlier. Initially, they would just reveal the stock, i.e. the total amount of provisions at the end of each year without specific information about what factors affected the balance during the year (see Figure 1A below). Later they added flow information by providing details on actual write-offs and recoveries during the year as well as the amount of new provisions actually charged to the profit and loss account (see Figure 1B below). Latter information disclosed in footnotes was

of particular value in the “forensic examination” of earlier bank financial statements since this bad debt expense was typically not shown specifically in the income statement. What is more, there seemed to be no actual standard as to the accounting treatment of bad debt expense, also called impaired asset expense. Most banks would show it as a component of operating expense, usually subsumed under “other operating expense”. Others like Bank of New Zealand and Countrywide Bank, however, at first considered this expense item simply as a reduction in interest revenue. Its treatment and luckily also the structure of financial accounts in general became more uniform just before 1990.

**Figure 1A: Disclosure Stock of Debt Provisions (General and/or Specific)**



**Figure 1B: Disclosure of Annual Debt Expense / Bad Debt Write-offs and Recoveries**



Source for Figure 1: published annual reports of financial institutions concerned.

Further information about the credit quality of the banks' loan portfolios became available in the early nineties when they began disclosing the gross values of impaired, also called non-accrual assets. At the same time, the phasing in of the Basel capital adequacy rules meant new reporting on risk weighted assets, now called risk-weighted credit exposures and tier I and II capital adequacy ratios. Before the introduction of this standard, pure non-risk weighted capital ratios had often been reported.

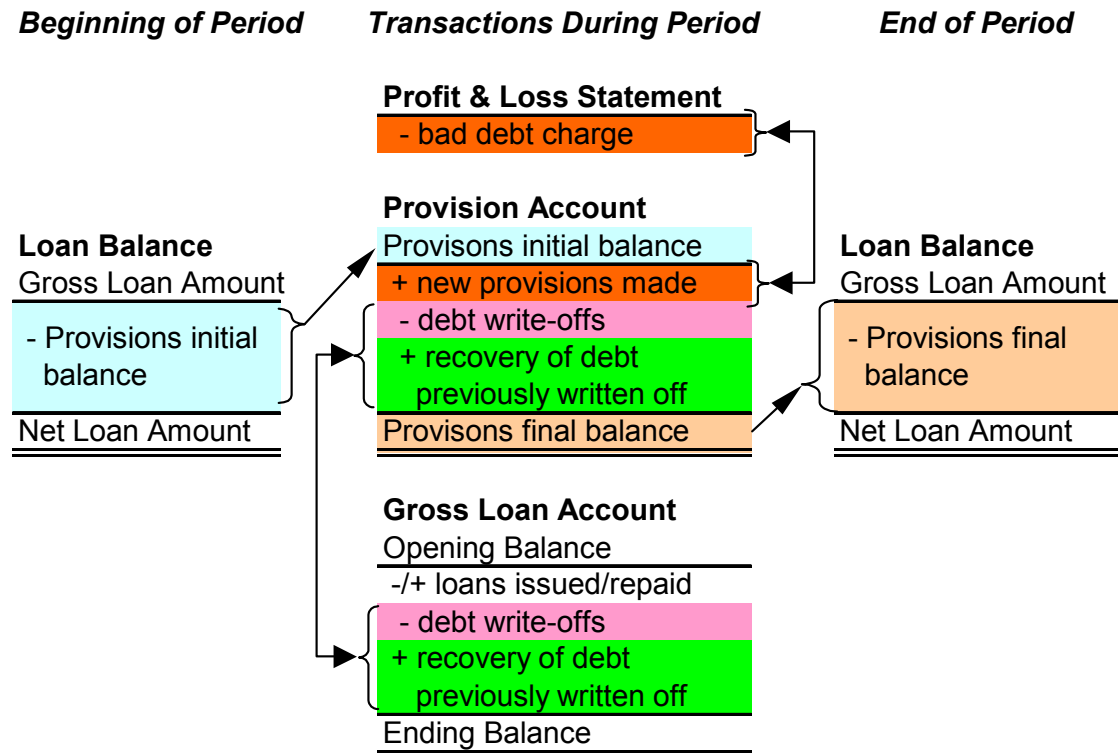
Above-mentioned 1997 FRS-33 standard brought about a wealth of additional credit risk related facts and figures. These include a breakdown of credit exposures by industry, average interest rates by loan category (which could be useful for assessing credit risk spreads) and some banks even show specific debt provisions and losses by loan category.

As a final general remark, privately owned banks like National Bank and ANZ were at the forefront of additional disclosures while formerly state-owned BNZ and institutions with roots in cooperative banking (building societies, trust banks) would take longer to switch to internationally recognized reporting standards. In the meantime however, the ever-smaller number of banks with a full national branch network report similar levels of details.

### **Accounting for Loan Losses**

Using provisions to account for loan losses is quite straightforward in principle. Figure 2 below illustrates the way banks provide for credit losses in a generic way. As a simplification, it just shows the treatment of on-balance sheet loan losses.

**Figure 2: Provisioning for Bad Loans – Generic Description of Method**



The essence of loan loss provisioning is that throughout the accounting period the bank will appraise all outstanding customer exposures and where they are considered doubtful, it will make new provisions. These in turn are charged as bad debt expense in the profit and loss statement (P&L). This means the bank will not generally write off debt directly to the P&L but reduce provisions which it has made in the current or earlier periods. Debt write-offs thus tend to lag the recognition of bad debt expense. Similarly, a recovery on a loan which was written off in a earlier period is not credited directly to the P&L but used to revert earlier debt write downs in the provision account.

Unfortunately, above depiction of bad debt provisioning is over-simplistic in many ways. Complications stem in essence from the fact that, after all, provisioning remains a matter of judgment. This in combination with the traditionally moderate regulatory interference in the

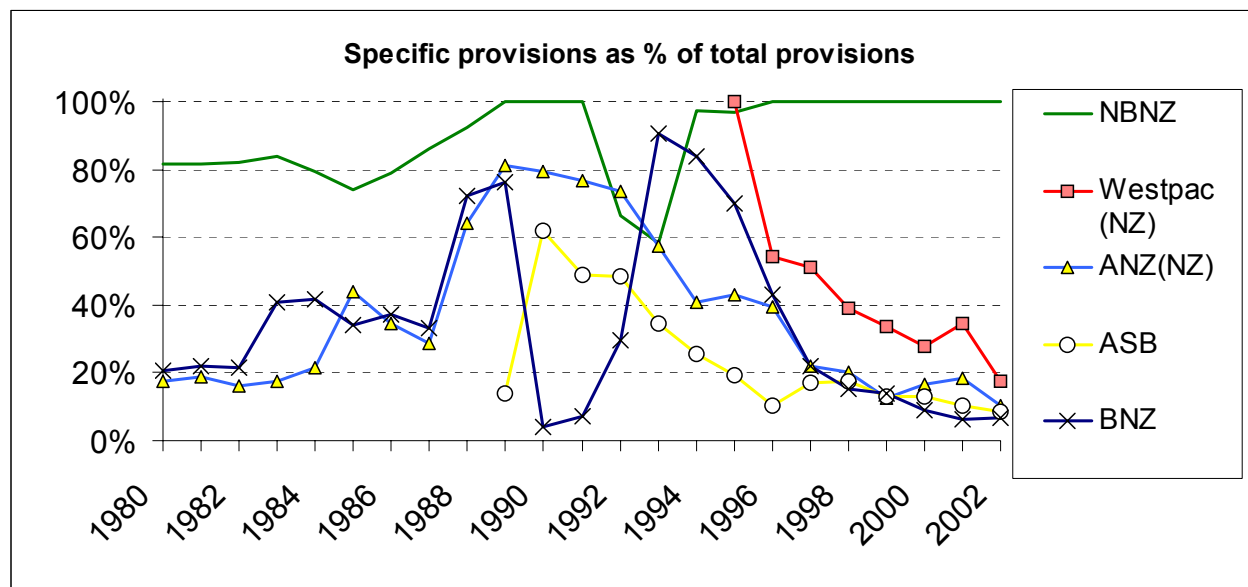
small New Zealand banking market has led to a heterogeneous form of disclosure of bad debt provisions and related information.

Firstly, banks differ in their interpretation of how likely a loan loss needs to be to make a provision and they have little guidance from FRS-33 in this respect. Unlike a corresponding APRA regulation in Australia which requires a provision if a loan loss is “probable”, FRS-33 does not define precisely when a bank should provide for a loan (ICANZ 2001). Common for the banks is that they all establish specific provisions for loans actually identified as bad, respectively for the ones where there is reasonable doubt over the collectability. All banks but NBNZ also estimate more discretionary general provisions to account for latent credit risks yet the interpretation of what these encompass varies. Westpac for one reports some general provisions but purely related to risks in acquired loan portfolios, e.g. the one of Trustbank bought in 1996. It does not maintain them specifically for its NZ operations but only at a group level. BNZ, ANZ and ASB<sup>2</sup> in more recent times indicate in their footnotes statistical methodologies for determining them. As of 2002, the share of specific as a percentage of total provisions was in the range of 7-10% for these three banks (see Chart 1 below) which is far away from ratios found by Pain (2003) for UK banks. In the UK specific provisions are typically larger than general provisions. The ratios for New Zealand banks have even been declining slightly since 1997 but one also notes that earlier in the observation period they had been much higher when the method for setting the level of general provision seemed quite judgmental and erratic at times.

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<sup>2</sup> ASB includes in its specific provisions so-called bulk provisions made against statistically managed portfolios (e.g. credit card debt). It is not clear whether other banks treat such bulk provisions as general, respectively also as specific provisions.

**Chart 1: Share of specific component in total provisions**



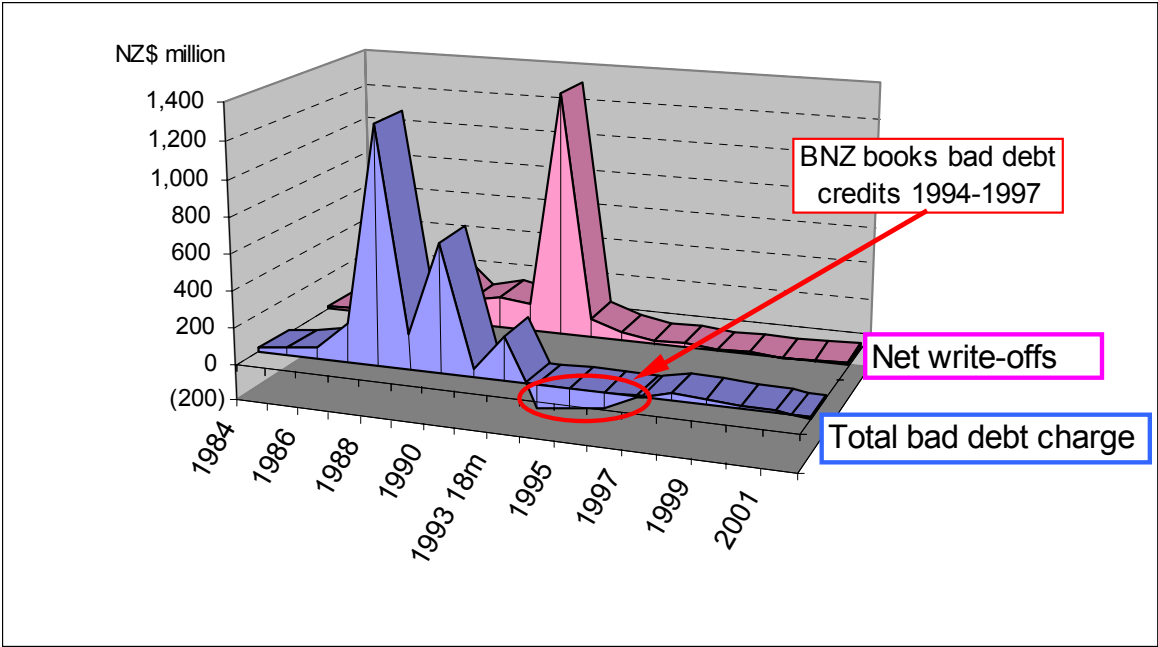
Note: Over much of the observation period NBNZ had a policy of not holding any general provisions for loan losses.

Another challenging aspect in the data collection process was to interpret the various ways banks would report actual credit losses in a particular year and to retrieve this piece of information. Complications were caused by alternative booking methods. ANZ, for instance, does not charge an increase in specific provisions to the P&L as bad debt expense but instead transfers it from general provisions. New general provisions are then charged to the P&L categorized as operating expense. As another example, Westpac charges loan write-offs directly to the P&L if it has not established a provision against the particular loan in an earlier period. Such differences in reporting were, however, more a matter of form than substance and relevant information could usually be obtained.

As indicated by Chart 1 above, the level of provisions would often fluctuate widely from year to year so there were instances where banks would actually report bad debt credits instead of a charge in certain periods (e.g. BNZ 1994 – 1997, NBNZ 1994, ANZ 1997). Chart 2 below

illustrates the delayed nature of actual debt-write-offs that follow the provisioning for bad debt for the case of BNZ. New provisioning and corresponding charges to the P&L at BNZ were quite erratic and, as it turned out, proved overly conservative because they led to the series of bad debt credits 1994 through 1997<sup>3</sup> when provisions were partially reversed. On the other hand, the development of bad debt write-offs is quite smooth. Even though it is delayed, this could possibly make it a better indicator of credit losses in a particular period.

**Chart 2: BNZ debt provisioning and net write-offs**



In summary, two conclusions can be drawn from the way banks in the sample account for bad loans. First of all, the data for both stock and flow of specific provisions appear more

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<sup>3</sup> BNZ actually also booked a bad debt credit per September 30, 1993, i.e. the first period under NAB control, but this was offset by a substantial general provision charge classified as extraordinary item in the P&L.

suitable for any comparative empirical work. If reported, the levels of general provisions are not likely to be based on comparable assumptions. Similarly, bad debt expense reported does not always look as a good indicator of actual credit losses incurred in a particular year. Instead actual debt write-offs, possibly net of recoveries can possibly be considered a better proxy of such credit losses.

### **Preliminary Review of Data**

This section provides a first visual inspection of the data collected and formulates some preliminary research ideas. Accordingly, it does not employ any statistical methodology to ascertain and quantify patterns, trends and correlations identified. It is the intention of the author to further investigate these in further versions of this paper. Moreover, the review is not intended to be comprehensive but mainly focuses on issues related to loan loss provisions and corresponding debt write-offs.

#### *Correlation of provisions with economic activity*

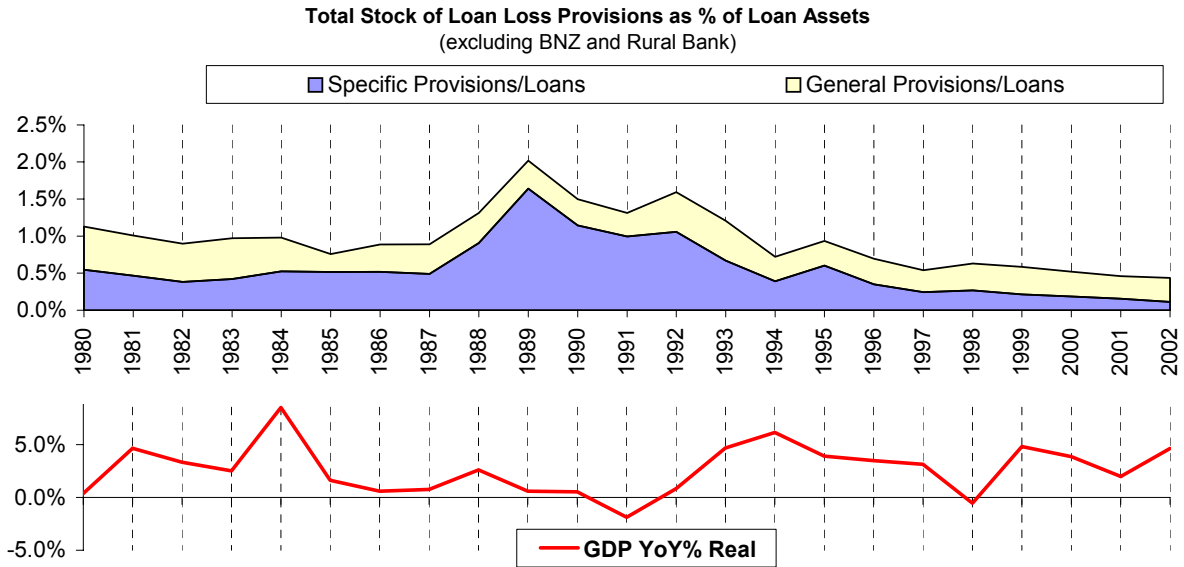
The following chart (Chart 3A) plots the stock of specific and general bad debt provisions as a percentage of loans outstanding over time and compares it to GDP growth in real terms. The period of comparably low growth in the New Zealand economy 1985 – 1987 was followed by a substantial rise in the stock of provisions. One notes that data for both BNZ and Rural Bank have been excluded for the graph. Including them would even accentuate the peak in provisions in the late eighties to early nineties because this was the period when both BNZ and Rural Banks had to work out their firm specific ills. This peak also occurs in the aftermath of financial market liberalization starting in 1984 which possibly made the banks take risks they were not used to.

Another aspect one can glean from these times series is that the recessionary phase around 1998 had only a minimal effect on loan loss provisions. As is commonly known, this slowdown was not accompanied by comparable troubles in the real estate markets and corporate world as they were seen in the early nineties. Further research will need to explain this difference. Another angle to be explored could be the hypothesis put forward by some researchers that bank managers only start increasing provisions if hit with hefty credit losses in which case they tend to overestimate them (discussed in Lobo & Yang 2001).

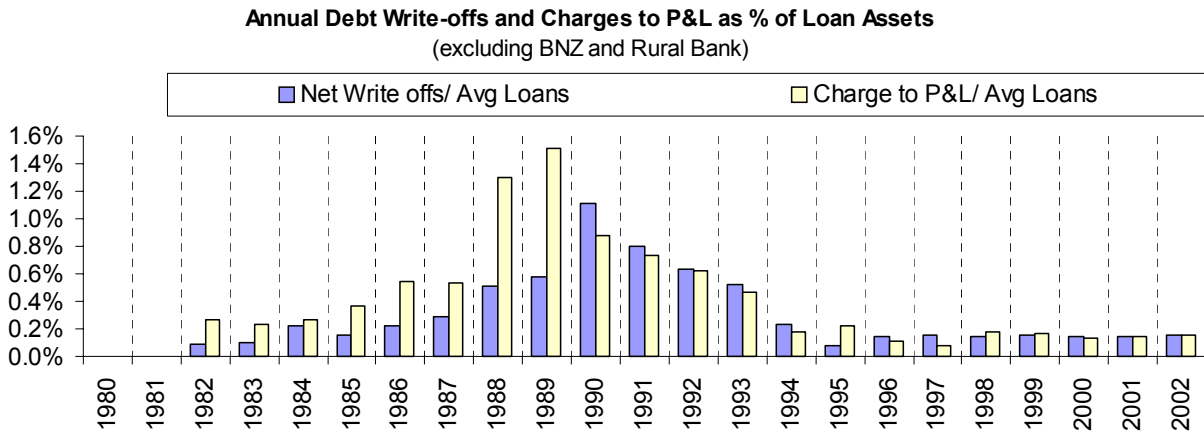
Just following in Chart 3B, one finds a corresponding analysis for annual debt write-offs (net of recoveries) as well as bad debt charges to P&L as % of loan assets. It again excludes BNZ and Rural Bank for the reasons given above. A very similar pattern emerges and the lagged nature of debt write-offs shows well.

Looking at the time before and after the provisioning peak of 1988 to 1993, both charts point to a potential shift in provisioning requirements during these comparably “calm” periods. On average provisions and bad debt charges were higher in the eighties than what was observed for the past few years. While this difference is somewhat less apparent in actual debt write-offs, it will be interesting to get the bottom of this phenomenon.

**Chart 3A: Stock of loan loss provisions compared to growth of real GDP in New Zealand**



**Chart 3B: Annual debt write-offs and bad debt charges New Zealand Banks**

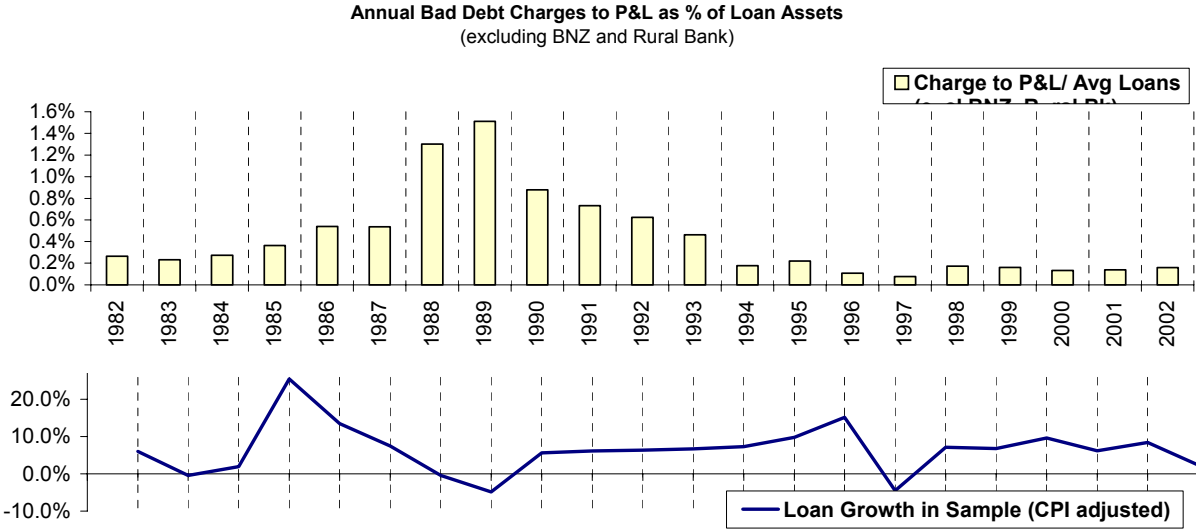


*Correlation of provisions with credit expansion*

As documented in Borio et al. (2001, p.11), experience suggests that an overextension in the financial system in the form of rapid credit growth may sow the seeds for subsequent strains. Accordingly, the following chart shows the loan growth observed in the sample in relation to annual bad debt expense. Note that loan growth has been adjusted by the CPI for the observation

period. The contraction of lending becomes apparent in the 1988-89 crises and later in the 1997 economic slow down. One could argue that the rapid loan growth with the onset of financial liberalization in 1984 was one of the causes for the subsequent loan losses. Similarly, there was an increase, though slight, in provisioning after the 1994–1996 credit expansion.

**Chart 4: Annual debt write-offs and bad debt charges New Zealand Banks**



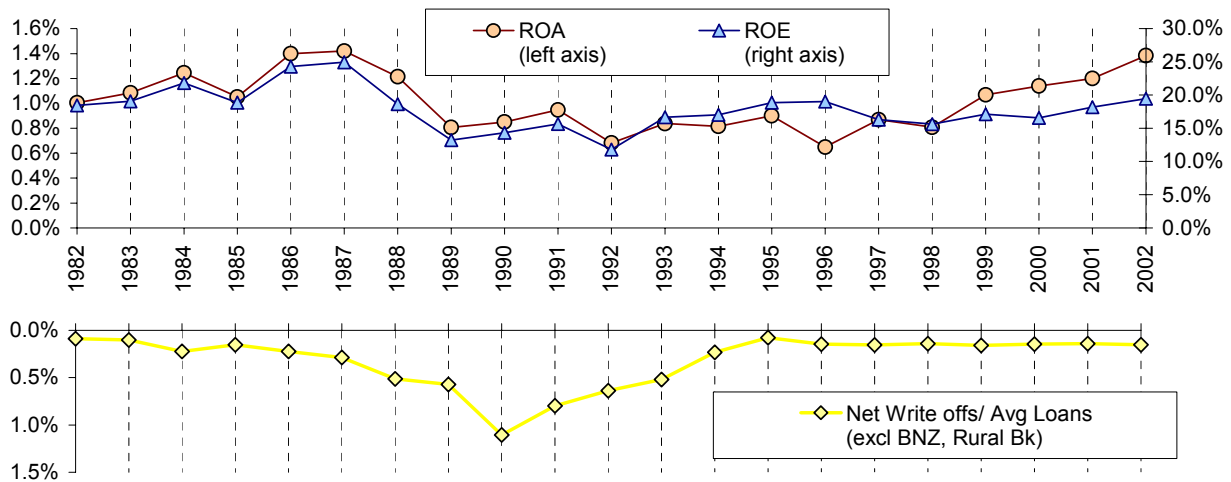
*Correlation of provisions / write-offs with bank profitability*

Chart 5 below depicts the profitability of the banks in the sample as measured by return on average assets (ROA) and return on average equity (ROE) compared to the annual bad debt provisions shown in earlier charts. This time, annual debt expense is shown as a line with the scale reversed as one would associate higher ROA/ROE with lower credit losses.

A preliminary review indicates strong profitability in the three years preceding the credit loss peak of 1988 to 1991. One can suspect that there was an over-optimistic assessment of credit risk during this period, i.e. an under-provisioning of new loans originated. More generally, one

could formulate a research hypothesis that strong loan growth combined with under-provisioning is a good leading indicator of “trouble” ahead. At the present time, banks also show returns which are high in a historical context, in particular ROA. Even though they are not experiencing extreme loan growth rates, there is the potential that banks currently are not sufficiently provisioning their credit risks.

**Chart 5: Annual debt write-offs (inverse) vs. ROA and ROE of New Zealand Banks\***



\* excluding BNZ and Rural Bank

One purpose of studying the impact of credit losses on overall bank returns could be to extend the data analysis at hand back into the past when banks did not disclose any specific loan loss information. If this correlation had a certain significance, one could then infer the level of such losses in the past. This is very important as during the past two decades the financial system in New Zealand has not really been put to the test. Yet it will be of great interest, particularly to regulators, what losses could be suffered under a worst-case scenario. Unfortunately, the data above do not seem to show a simple relationship. A suitable model might have to consider the

dynamic component, i.e. lagged factors. As discussed above, a strong growth in ROA/ROE could be a precursor for “bad things to come”, similarly to strong credit growth.

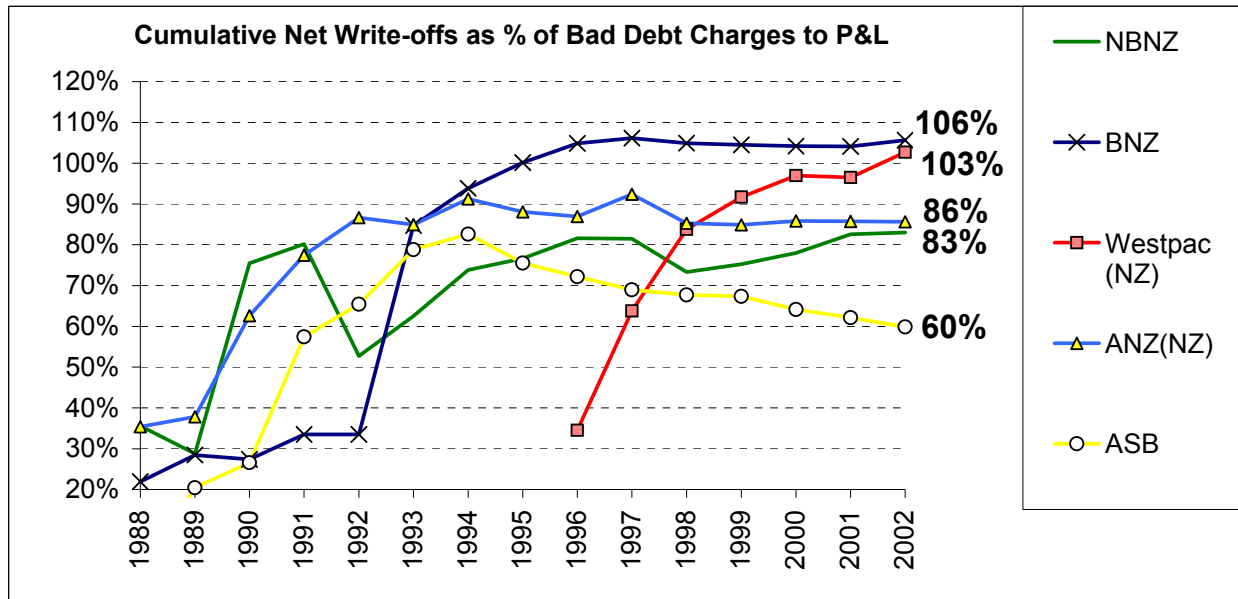
*Correlation of bad debt provisions with actual debt write-offs*

As explained earlier, bad debt provisions represent estimates of bad debt write-offs that will be required in the current and future periods. It is thus interesting to study how accurate bank managers have been in their predictions. One way this can be assessed is by calculating the ratio of cumulative actual write-offs<sup>4</sup> over corresponding cumulative charges to the P&L. It is meaningful to cumulate these two values over an extended period of time as was done by Pain (2003) for the sample of UK banking institutions. He found a ratio of approx. 90% which would signal that (1) a majority of provisions signaled irrevocable losses, particularly when he was looking at a time horizon from 1987 to 2000, and (2), more general, predictions have proven quite accurate.

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<sup>4</sup> In this preliminary analysis, write-offs net of bad debt recoveries were used.

**Chart 6: Main NZ banks - cumulative write-offs and provisions compared**

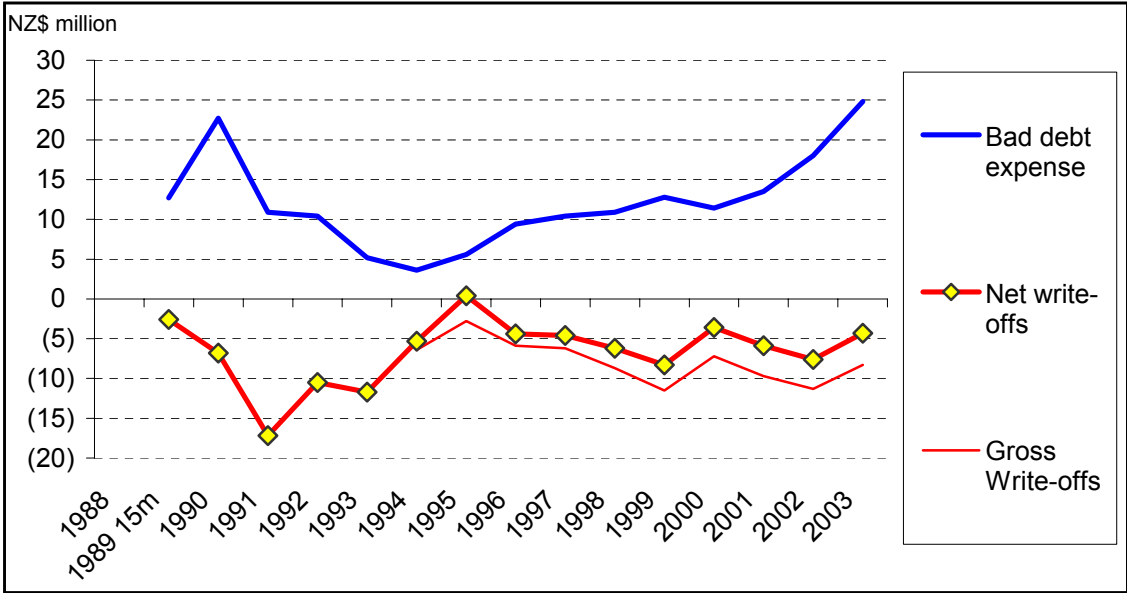


As illustrated in Chart 6 above, the results are not so clear-cut for the sample of NZ banks when the ratio was calculated for a 15-year period starting 1988 and ending 2002. ANZ (86%) and NBNZ (83%) show ratios quite comparable to ones found for UK banks. Also Westpac with 103% is not too far off but this result was derived from 7-years data only. Major provisions were added just before this time span when Westpac acquired Trustbank. One can assume that including them would bring the ratio clearly below 100%. Even higher is BNZ (106%) whose ratio is affected by various large special charges during the crisis of the late eighties and early nineties. If one extends the cumulation period back to 1984, the year BNZ started reporting bad debt provisions, one finds a ratio of 100%.

A very different picture emerges for ASB which has been provisioning in a very generous way. In hindsight, only 60% of bad debt charges were matched by corresponding write-offs. As shown in Chart 7, ASB had virtually stable debt write-offs in absolute terms over the past 8 years while the bank increased its general provisions in line with its growing loan portfolio. One also

notes that for the past decade ASB showed comparably large recoveries of previously written-off debt. This can be seen as the large gap between net and gross debt written off. ASB thus appears to have an equally conservative policy for writing down debt while other banks postpone this decision until a loss becomes a virtual certainty.

**Chart 7: ASB Bank – Debt write-offs and provisioning compared**



**Conclusion**

This paper first presented the method for collecting and adjusting data on loan loss provisions and corresponding debt write-offs for a sample of eight New Zealand banks. It became clear that reporting of this information is quite heterogeneous and considerable effort was required to bring it into a comparable form. The completeness of the data set was also affected by the dramatic re-shaping of the New Zealand financial system in the deregulation of the late eighties. This meant good early data were only available for private commercial banks

but not for formerly state-owned BNZ or mutual savings banks such as ASB. Similarly, Westpac which is not incorporated as a separate legal entity in New Zealand started reporting on a pro-forma basis in 1997 only.

A preliminary review of the data revealed some interesting results. Not surprisingly, slow growth or even recessionary times had an impact on loan loss provisions but it was found that not each economic slow-down had the same effect. Similarly, strong credit expansion has some bearing on subsequent loan losses but there is again considerable noise in the data. A time series comparison of the banks profitability with credit losses indicated that times of strong profit growth are often followed by above average debt write-offs. This would indicate that in boom times bank managers tend to underestimate the credit risks accumulating in their growing loan portfolios and thus do not provision sufficiently. Finally, it was studied how accurately bad debt provisions are reflected in subsequent write-offs. While on the whole banks do not seem to systematically under- or overestimate provisions in relation to actual write-offs, ASB is an exception. It seems to follow an extremely conservative provisioning approach with only 60% of all provisions charged to the P&L over the past 15 years actually written off during the same period.

As indicated in the introduction, this paper simply provides the starting point for a further, more thorough exploration of credit provision and loss data of New Zealand banks. Research ideas developed here will thus be further worked out and presented in further versions of this paper.

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## Appendix 1:

### New Zealand Banking Institutions: Major Events During Observation Period

	Auckland Savings Bank	ANZ	National Bank	Rural Bank	Countryside Building Society	Bank of New Zealand	Bank of New South Wales	Commercial Bank of Australia	Regional Savings & Trust Banks	
1979		NZ Subsidiary formed								1979
1980		25% of shares placed								1980
1981										1981
1982							Merger forms	Westpac		1982
1983										1983
1984										1984
1985		with investors, shares								1985
1986		repurchased by parent 1986								1986
1987						Govt sells 25% of shares				1987
1988	ASB corporized,			registered	Registration and			Trust Bk Group formed		1988
1989	>CBA takes majority				name change					1989
1990	acquires Westland Bk			sold to						1990
1991		acquires Post Bank		Fletcher Group						1991
1992			acq. Rural Bank	← Rural Bank	acquires United Bank					1992
1993				Bank	RBSC full control	bought by NAB				1993
1994								amalgamation		1994
1995								of members		1995
1996							acquires Trust Bank	← Trust Bank		1996
1997										1997
1998			acquires Countryside	← Countryside Bank						1998
1999										1999
2000	CBA takes full control									2000
2001										2001
2002	ASB	ANZ	NBNZ			BNZ		Westpac		2002
2003		acquires NBNZ	← NBNZ							2003

CBA – Commonwealth Bank of Australia

RBSC – Royal Bank of Scotland

NAB – National Australia Bank

Source: Bank Annual Reports (see reference)



