

# A Typology of Credit Loss and Provisioning Reporting by Banking Institutions in Australasia

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## Reporting Typology

- Motivation
- Literature review
- Credit loss data Australasia
- Typology / template
- Sample analysis conducted with data extracted

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## Motivation

- Stability and integrity of banking systems are of utmost importance to national economies
- Credit losses, or more generally, asset quality problems have repeatedly been identified as the ultimate trigger of bank failures  
[e.g. in Graham & Horner (1988), Caprio & Klingebiel (1996)]
- Entities in charge of prudential supervision and system stability thus need to understand drivers of credit losses

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## Motivation

- Very topical research area in the context of New Basel II Capital Accord
  - Basel II will allow use of proprietary models to determine required capital but these models & parameters require validation by supervisors
  - Need to understand potential procyclical effects which could endanger system stability

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## Credit Risk & Basel II



Basel on the Rhine River

Retrieved from <http://www.basel.ch> 21 September 2004

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## Motivation

- Historical data on credit losses and provisions are widely used in empirical research.
- Most researcher rely on data from third parties such as commercial providers (e.g. Bankscope) or supervisory sources.
- Process of capturing these data is not documented in the literature

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## Motivation

- During a project to capture the credit loss experience of Australasian banks, a great variety of reporting formats of data items related to loan losses could be observed.
- This paper thus proposes a standard methodology and template to capture credit loss and provisioning information from banks along equivalent informational content

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## Literature review

Two main streams of research that analyse credit loss or more specifically loan loss experience of banks

1. Literature with regulatory focus looks at macro & micro factors
2. Literature looks discretionary nature of loan loss provisions and behavioural factors which affect them

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## Literature review

Literature which explores macro and micro (bank specific) determinants of loan losses

- Examples macro factors:
  - GDP growth
  - indebtedness of households and firms
  - asset prices (real estate, share markets)

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## Literature review

- Examples of micro (bank specific) factors:
  - exposure to certain lending, collateral
  - portfolio diversification
  - (past) credit growth
  - net interest margins
  - efficiency

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## Literature review

- Behavioural hypotheses in the literature on the discretionary nature of loan loss provisions
  - Income smoothing: Greenawalt & Sinkey (1988)
  - Capital management: Moyer, 1990
  - Signalling: Akerlof, 1970, Spence, 1973
  - Taxation Management

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## Literature review

- Bank data in this literature typically source from third parties
  - Literature using commercial data: Cavallo & Majnoni (2001), Bikker & Metzmakers (2003)
  - Literature based on (partially) confidential data reported to regulators: Arpa et al. (2001), Keeton (1999), Quagliariello (2004)

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## Literature review

Research based on original published financial accounts are rare (very large effort to collect data).

Examples are

- Pain (2003): 7 UK commercial banks & 4 mortgage banks 1978-2000
- Kearns (2004): 14 Irish banks, mostly early 1990s to 2003

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## Credit Loss Data Australasia

- The database includes extensive financial and in particular credit loss data for
  - 23 Australian + 10 New Zealand banks
  - Time period from 1980 to 2005
  - Approximately raw 55 data elements per institution, of which 12 specifically related to the credit loss experience (CLE) of the bank

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# Credit Loss Data Australasia

## Banks in sample

**AUSTRALIA:** Adelaide Bank, Advance Bank, ANZ, Bendigo Bank, Bank of Melbourne, Bank West, Bank of Queensland, Commercial Banking Company of Sydney, Challenge Bank, Colonial State Bank, Commercial Bank of Australia, Commonwealth Bank, Elders Rural Bank, NAB, Primary Industry Bank of Australia, State Bank of NSW, State Bank of SA, State Bank of VIC, St. George Bank, Suncorp-Metway, Tasmania Bank, Trust Bank Tasmania, Westpac

**NEW ZEALAND:** ANZ National Bank, ASB, BNZ, Countrywide Bank, NBNZ, Rural Bank, Trust Bank NZ, TSB Bank, United Bank, Westpac (NZ)

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# Credit Loss Data Australasia

- The methodology developed here was motivated after observing great heterogeneity in reporting credit loss data by banks in Australasia
- Differing accounting / reporting formats
  - through time
  - in between institutions

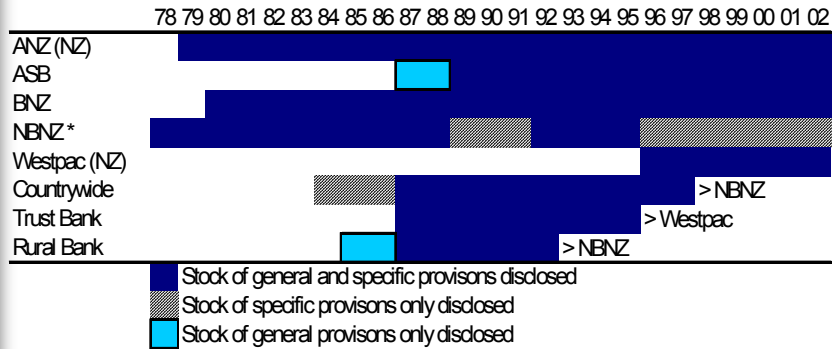
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# Credit Loss Data Australasia

Example heterogeneity in reporting:  
stock of provisions NZ banks 1978-2002



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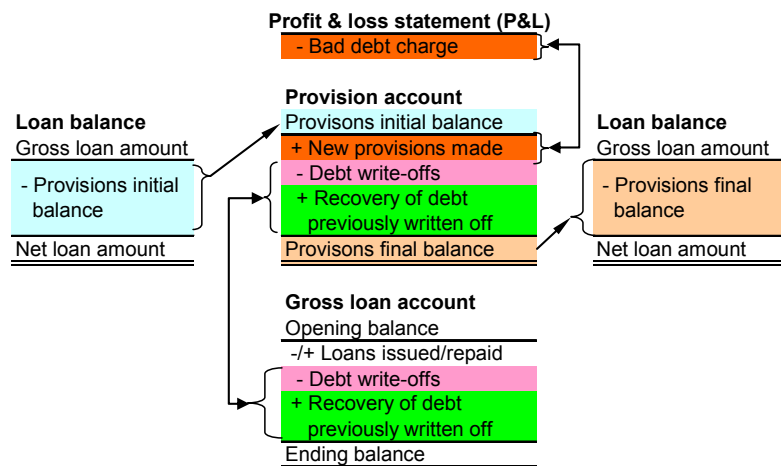
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# Primer Loan Loss Accounting

*Beginning of period*

*Transactions during period*

*End of period*



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## Typology: Provisions Expense

### ■ Charges to P&L from ...

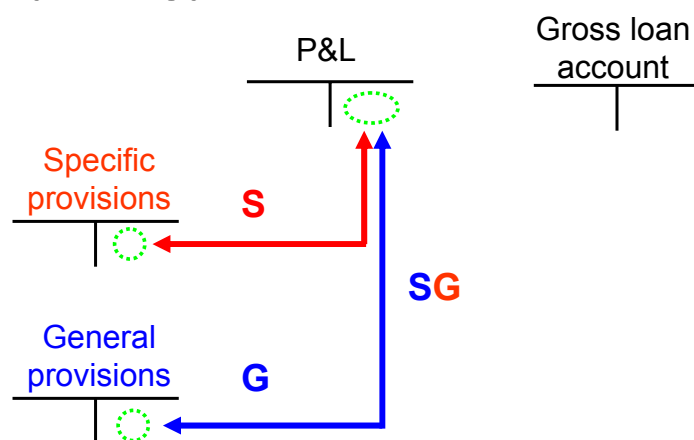
- Not shown O
- Specific provisions account S
- General provisions account G
- Both provision accounts SG
- Combined provision account C

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## Typology: Provisions Expense



Note: only more frequent types shown on this slide

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# Typology

- Write-offs shown in ...

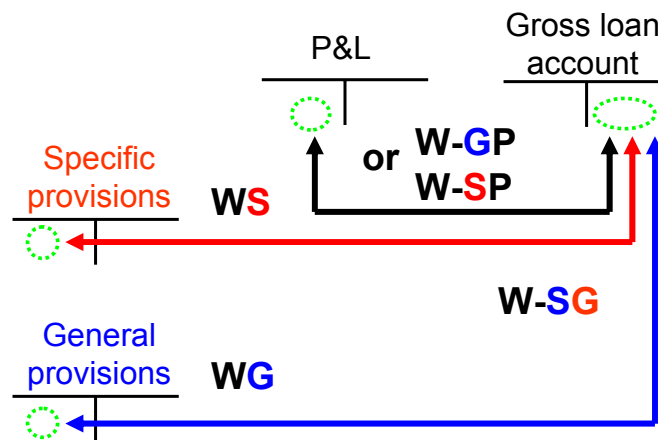
- Not shown WO
- Specific provisions account WS
- General provisions account WG
- Combined provisions acc. WC
- Both provision accounts W-SG
- Specific and direct in P&L W-SP

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# Typology: Write-offs



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# Typology

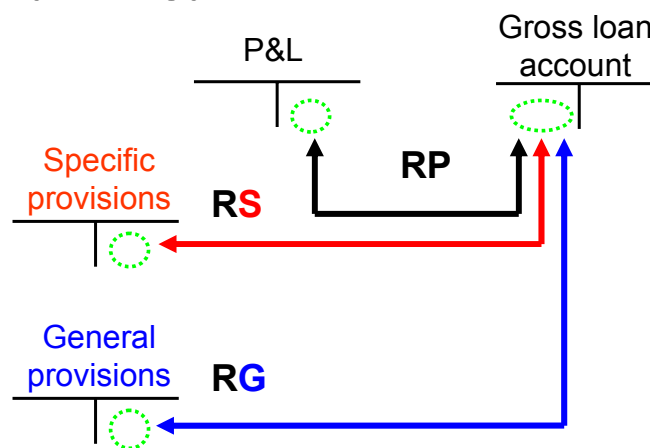
- Recoveries shown in ...
  - Not shown RO
  - Specific provisions account RS
  - General provisions account RG
  - Combined provisions acct. RC
  - P&L account RP
  - Both provision accounts R-SG

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# Typology: Recoveries



Note: only more frequent types shown on this slide

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## Typology

- Identified 27 different variations / combinations of reporting (see Table 2 in paper)
- Informational content differs, e.g. when direct write-offs are shown
- Reporting of recoveries is patchy, particularly for earlier periods and smaller banks

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## Typology: CLE Data Template

CLE: Credit Loss Experience

### Stock of provisions

Stock of provisions specific	(1)
Stock of provisions general	(2)

### Movement in provisions / flow information

Starting total provision	
<hr/>	
- Bad debt written off	(3)
+ Recoveries debts written off	(4)
+ Charge/(credit) to P&L	(5)
+/- Other transactions	(6)
<hr/>	
Ending total provision	(1) + (2)

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## Typology: CLE Data Template

CLE: Credit Loss Experience

### Details bad debt charge to P&L

+ Specific provisions additions	(7)
+ General provisions additions	(8)
+ Direct write-offs	(9)
- Recoveries	(4)
+/- Other (plug)	(10)
<hr/>	
Total charge to P&L	(5)

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## Typology benefits

- Allows standardization of data across many reporting formats
- If we just record data as we 'encounter' them in the annual report, there would be, for example, no consistency in
  - Share of expense specific/general
  - Level of write-offs
  - Treatment of recoveries
- Potential application in other geographic regions

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## Data adjustments

- Can “guesstimate” if certain data elements not reported, e.g. estimate write-offs from levels of provisions and impaired asset expense

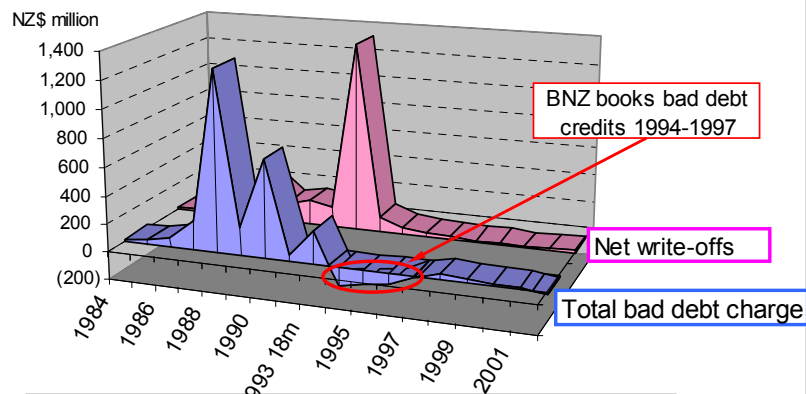
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## Samples of data extracted

How accurate are estimates of loan losses?



**BNZ debt provisioning and net write-offs**

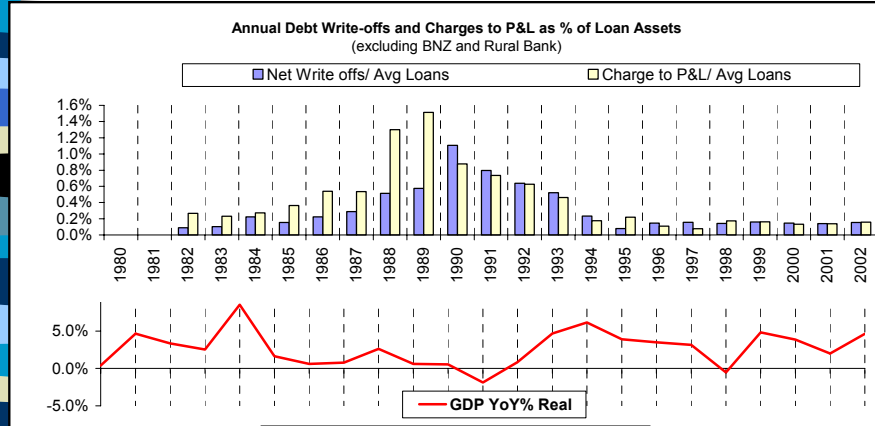
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# Samples of data extracted

Provisioning/write-off behaviour correlated to macro factors



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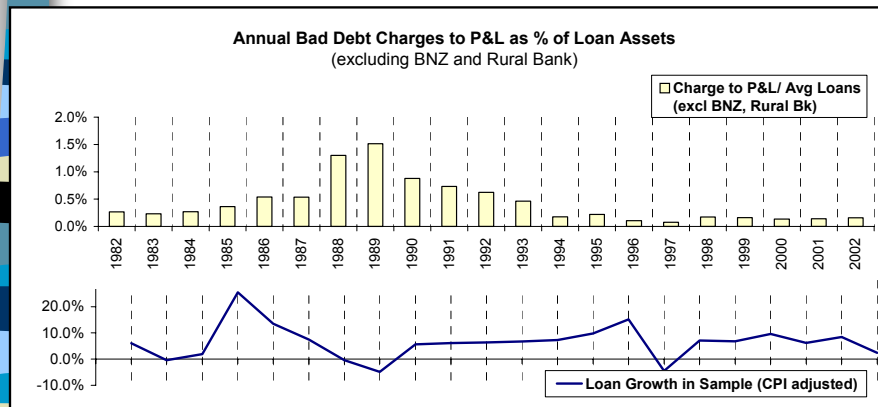
Note: chart for NZ Bank sub-sample only

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# Samples of data extracted

Loan growth is the seed for later credit losses (Keeton 1999)



Note: chart for NZ Bank sub-sample only

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## Sample analysis Correlation of CLE Proxies

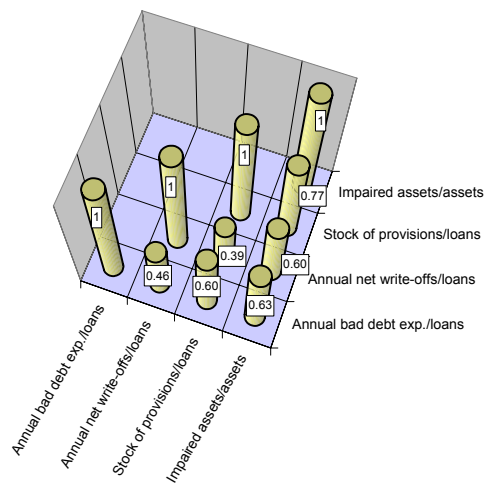
- Evaluate suitable proxy for CLE.
- There is no literature which evaluates which might be most suitable
- This is quite surprising as correlation between commonly used proxies is not even close to one (see chart on next slide)

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## Sample analysis Correlation matrix of CLE Proxies



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## References

## Selected References

*Bikker, J. A., & Metzemakers, P. A. J. (2003). Bank Provisioning Behaviour and Procyclicality, De Nederlandsche Bank Staff Reports, No. 111.*

*Caprio, G., & Klingebiel, D. (1996). Bank insolvencies : cross-country experience. Worldbank Working Paper WPS1620.*



## Selected References

Cavallo, M., & Majnoni, G. (2001). *Do Banks Provision for Bad Loans in Good Times? Empirical Evidence and Policy Implications*, World Bank, Working Paper 2691.

Graham, F., & Horner, J. (1988). *Bank Failure: An Evaluation of the Factors Contributing to the Failure of National Banks*, Federal Reserve Bank of Chicago.

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## Selected References

Kearns, A. (2004). *Loan Losses and the Macroeconomy: A Framework for Stress Testing Credit Institutions' Financial Well-Being*, Financial Stability Report 2004. Dublin: The Central Bank & Financial Services Authority of Ireland.

Pain, D. (2003). *The provisioning experience of the major UK banks: a small panel investigation*. Bank of England Working Paper No 177, 1-45.

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# A Typology of Credit Loss and Provisioning Reporting by Banking Institutions in Australasia

Back-up Slides

## Basel II Pillars

- Pillar 1:
  - Minimum capital requirements
- Pillar 2:
  - A supervisory review process
- Pillar 3:
  - Market discipline (risk disclosure)



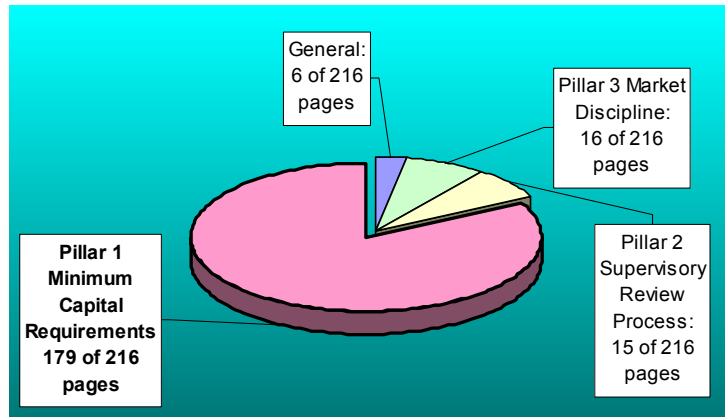
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# Basel II Pillars

Pages in New Basel Capital Accord (issued June 2004)

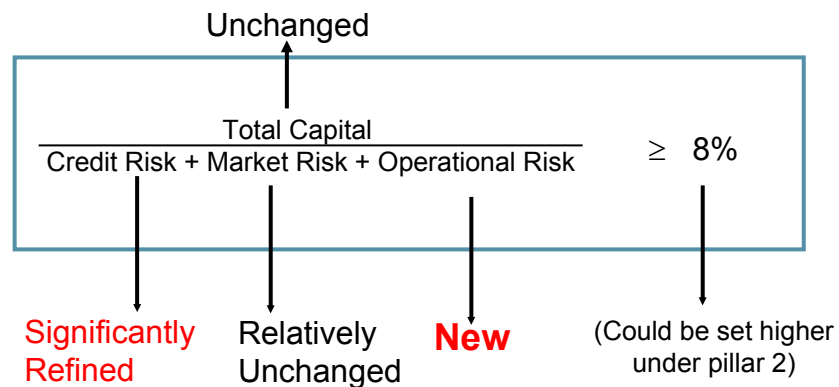


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## Pro Memoria: Calculation Capital Requirements under Basel II



Source: slide inspired by PWC presentation slide retrieved 27/7/2005 from <http://asp.amcham.org.sg/downloads/Basel%20II%20Update%20-%20ACC.ppt>

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## Basel II – IRB Approach

Two approaches developed for calculating capital minimums for credit risk:

- Standardized Approach (essentially a slightly modified version of the current Accord)
- Internal Ratings-Based Approach (IRB)
  - foundation IRB - supervisors provide some inputs
  - advanced IRB (A-IRB) - institution provides inputs

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## Basel II – IRB Approach

- Internal Ratings-Based Approach (IRB)
  - Under both the foundation and advanced IRB banks are required to provide estimates for probability of default (PD)
  - It is commonly known that macro factors are the main determinants of PD

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