

The ANZ Risk Management Framework

Australia and New Zealand Banking Group Limited

27 July 2004

Dr Mark Lawrence

Chief Risk Officer

Creating a more sustainable, lower risk business

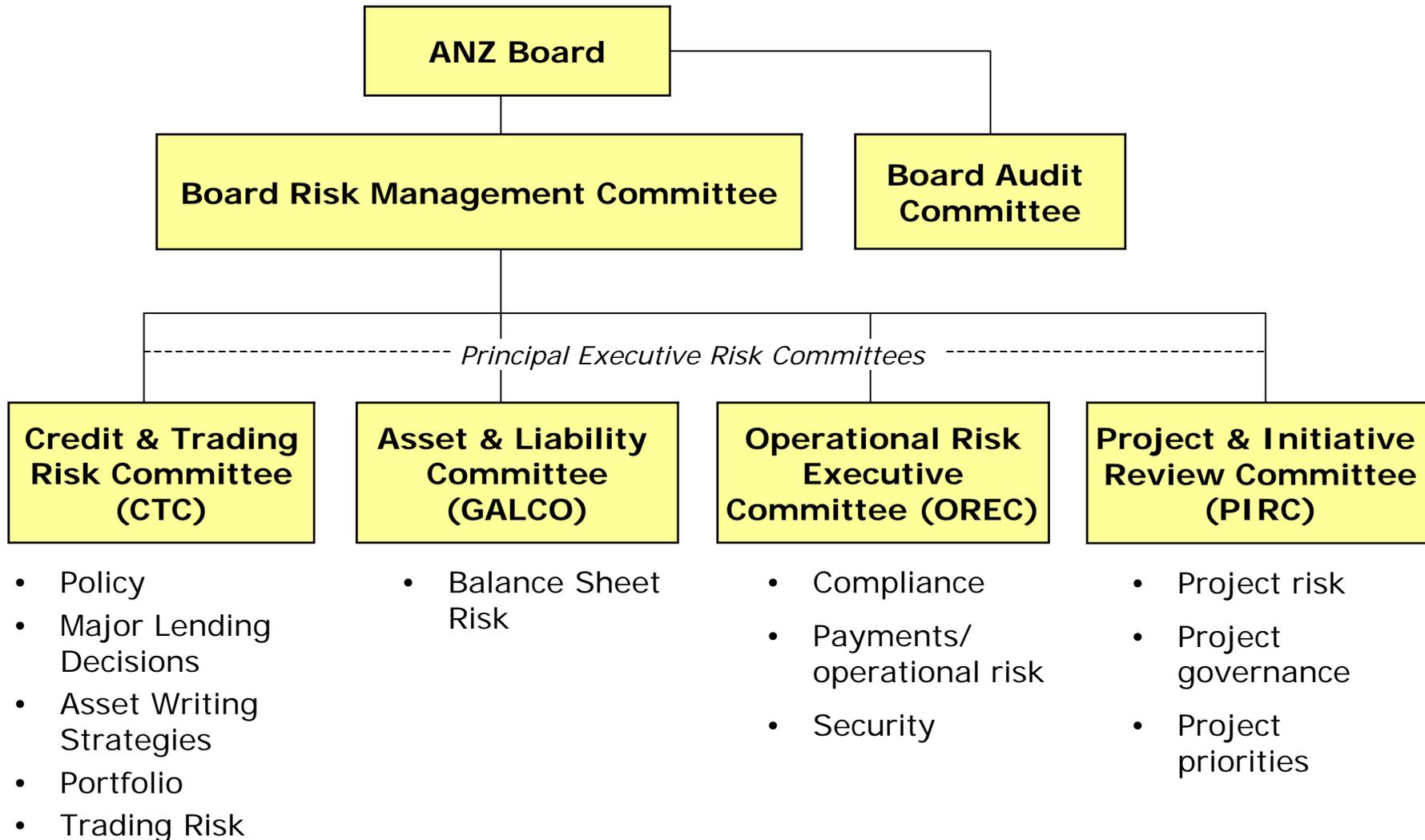
- Significantly improved credit risk framework, profile and outcomes
- Strong market & operational risk capability
- Economic capital models embedded for all major risks across all businesses
- Independent central risk team is formally involved in all strategic initiatives
- Simplifying and strengthening compliance - ongoing

The Broad Framework

Context: ANZ has been building its Risk Management Capability for more than a decade

Prior to 1994	No formal “Risk Management” function, but ANZ had a credit “workout” area and an operational risk function; Rudimentary risk grading and pricing processes; no risk-based capital allocation
1995	Credit risk unit formed, with a particular emphasis on handling our actual and prospective property portfolio
1996–97	Board Risk Management Committee established; Regulatory Compliance framework implemented; Credit risk grading models built – Probability of Default, Loss Given Default; Portfolio granularity enhanced; economic capital for credit risk; EVA
1999	Market and Operational Risk capability strengthened
2000	Operational Risk economic capital model implemented; Creation of dedicated Retail Risk function
2001	Basel II project commenced
2002	Substantial Risk Management capability embedded in consumer businesses;
2003	Increased focus on the management of project risks; Formal Group Risk Management involvement in Strategy
2004	Specialised Technology Risk function created Group Compliance framework enhanced

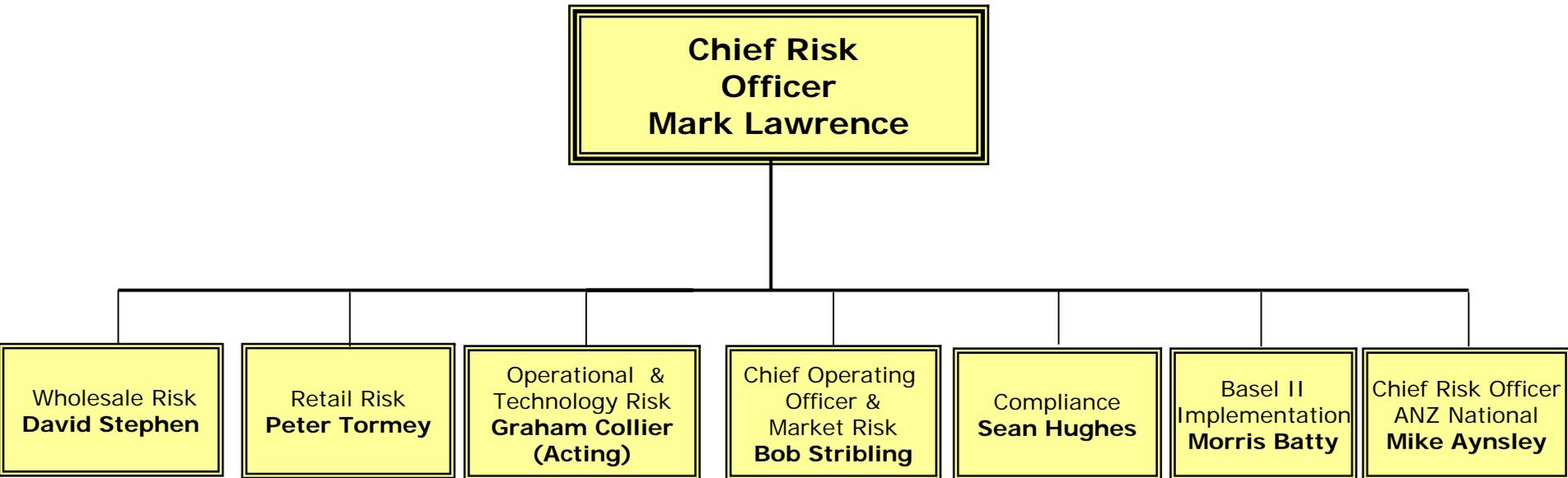
ANZ Organisation & Board Governance



Governance Role of Group Risk Management

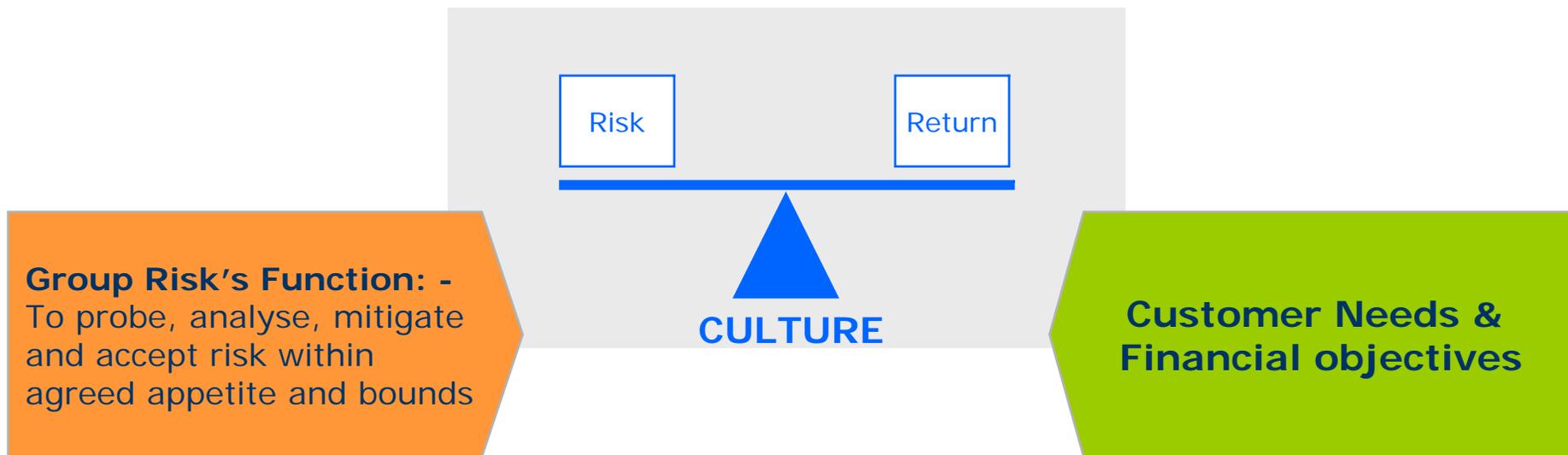
- Final authority to determine the risk boundary conditions for the Group and for each business
- Responsible for risk policies, principles and process standards that define ANZ Group's risk strategy and appetite
- Satisfy the Board that controls, skills and systems enable compliance with Group policies and standards
- Responsible for measuring, assessing and monitoring the level of risk in the Group; approving material risk exposures, limits and transactions; and reporting these and other material risk issues to Executive Management, the Board and Regulators
- Champion ANZ's reputation and risk culture, with objectivity and independence, ensuring that risk is always considered as part of the strategic agenda

Group Risk Management Structure July 2004



ANZ Culture: A Question of Balance

- ANZ is focused on achieving growth within appropriate risk/control boundaries
- Balance is the **KEY** to ANZ's success & **PEOPLE** provide that balance



The Challenge is to bring together disparate parts to form a cohesive whole

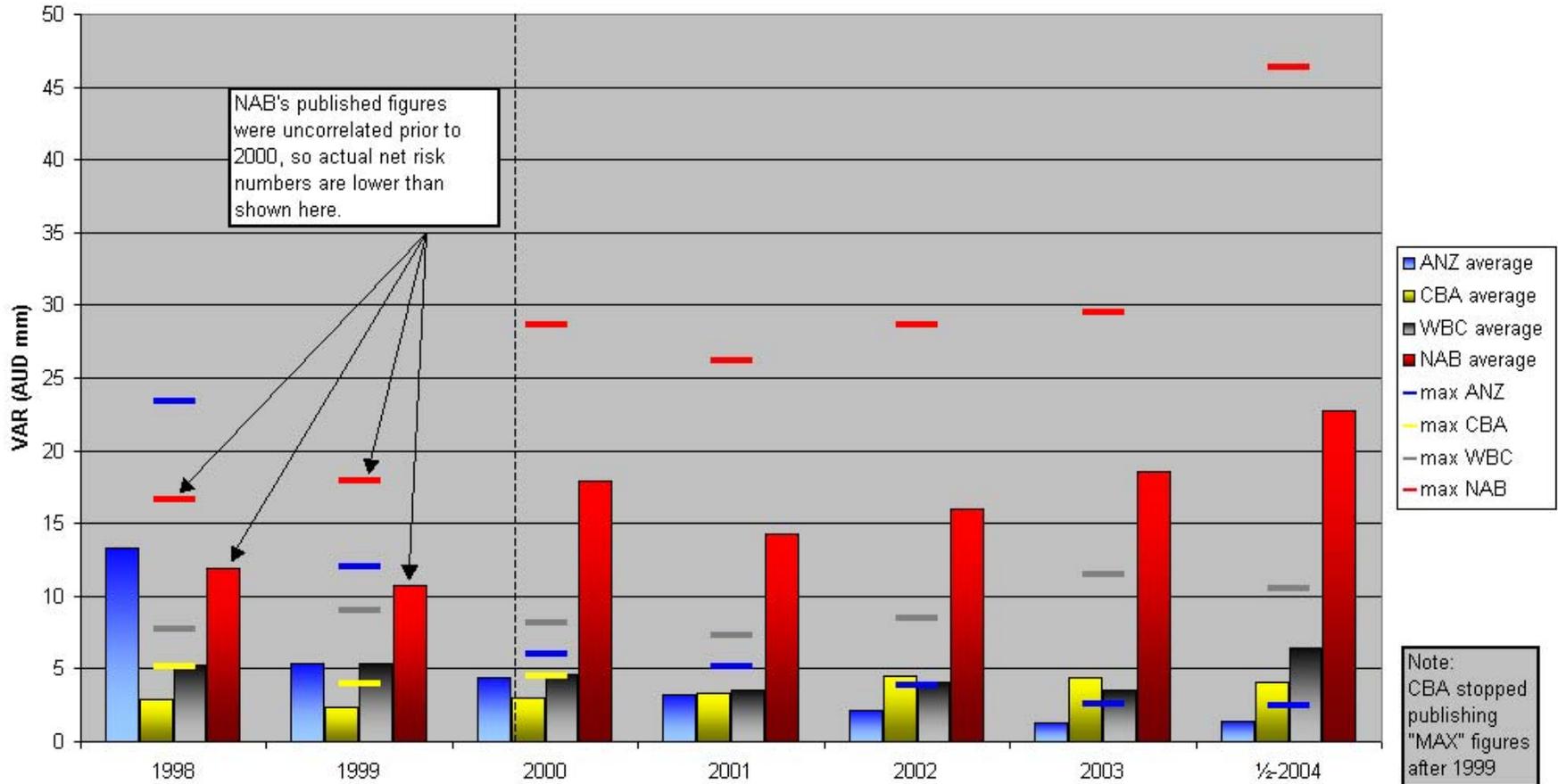
Portfolio monitoring & effective controls, using technical skills & a macro view of the system process/institution built around a shared cultural approach

Market Risk

Market Risk: Current Risk Profile

- Based on publicly-reported VAR measures, ANZ now has the lowest trading risk profile of the major Australian Banks

Total "Value At Risk" (VAR) from Annual Reports
(normalised to 97.5% confidence level)



What is VaR?

The "Value at Risk" (VAR) of a portfolio:

- is a statistical estimate of the potential daily loss to a specified confidence level (eg, 97.5%)
- is based on an historical simulation using changes in market prices over the past 500 days...
- ... which takes into account correlated movements across the different products/currencies/positions.

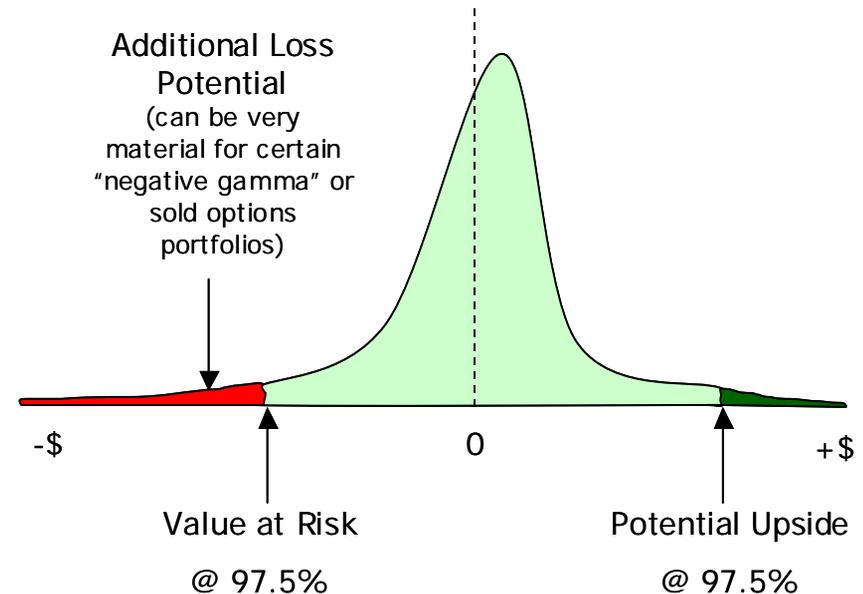
The graph below shows a typical distribution of the 500 simulated profit-and-loss results, and the corresponding level of the Value-at-Risk.

Note: to ascribe meaning to the VAR number which results from this calculation, is to assume that the movement in the various rates and prices over the next 24 hours will be broadly similar to and reflected in the historical rate movements experienced over the past 500 days.

3 limitations of VAR are very important to understand:

- If tomorrow is not like the past, then calculated VAR will be misleading – i.e., **Event Risk is not covered.**
- VAR is typically a 2 or 3 standard deviation measure. **VAR is not "Worst Case" – actual losses can be many multiples of the VAR estimate for certain portfolios.**
- VAR presumes market liquidity, irrespective of position size.

Conclusion: VAR numbers must be interpreted with great caution – they are not used in the direct management of risks on the dealer's desk. A comprehensive framework of Detailed Control Limits is used for this purpose



The PAST is not a proxy for the FUTURE

Value-at-Risk Limits and Exposures

- ANZ utilitises VAR limits as an “outer-bound” constraint on dealer activity
- Limits are allocated by Market Risk at Global ANZ Trading Book level, by each business line down to individual trading desks, by product line, and by geography
- VAR Limits are monitored daily by the independent Market Risk Unit, with all excesses thoroughly investigated, action taken as appropriate, and reported to the Credit & Trading Committee as part of the regular monthly Market Risk Report

NB: *VAR aggregation at higher levels takes account of correlation/diversification effects across portfolios and is not simply lower level portfolios combined on an additive basis*

- Other limits are used to more tightly control dealing activities
 - **Cumulative Stop-Loss Limits** specify the maximum loss that a business can sustain before trading is suspended (as a firm policy requirement). When/if this limit is breached, a full written management assessment (considering causes, evolving market dynamics, trading strategy and style, skills, mindset, etc.) is required before Market Risk will authorise resumption of trading.
 - **Detailed Control Limits** comprise a detailed set of product-specific measures and sensitivity limits which are designed to control trader behaviour and complement the VAR limit structure.

Detailed Control Limits Framework

- There are several Detailed Control Limits which further constrain risk levels in different books. Some examples applicable to specific portfolios:

Open Position Limits

Open position limits are used to limit the outright currency risk position for the Spot FX trading business.

"Delta-Gamma" Limits

"Delta-Gamma" limits are P/L sensitivity limits which specify the maximum loss an options book is permitted to sustain for specified movements in underlying rates. Importantly, these limits pick up the non-linearity or convexity risk (Gamma) inherent in open option positions.

"Vega" Limits

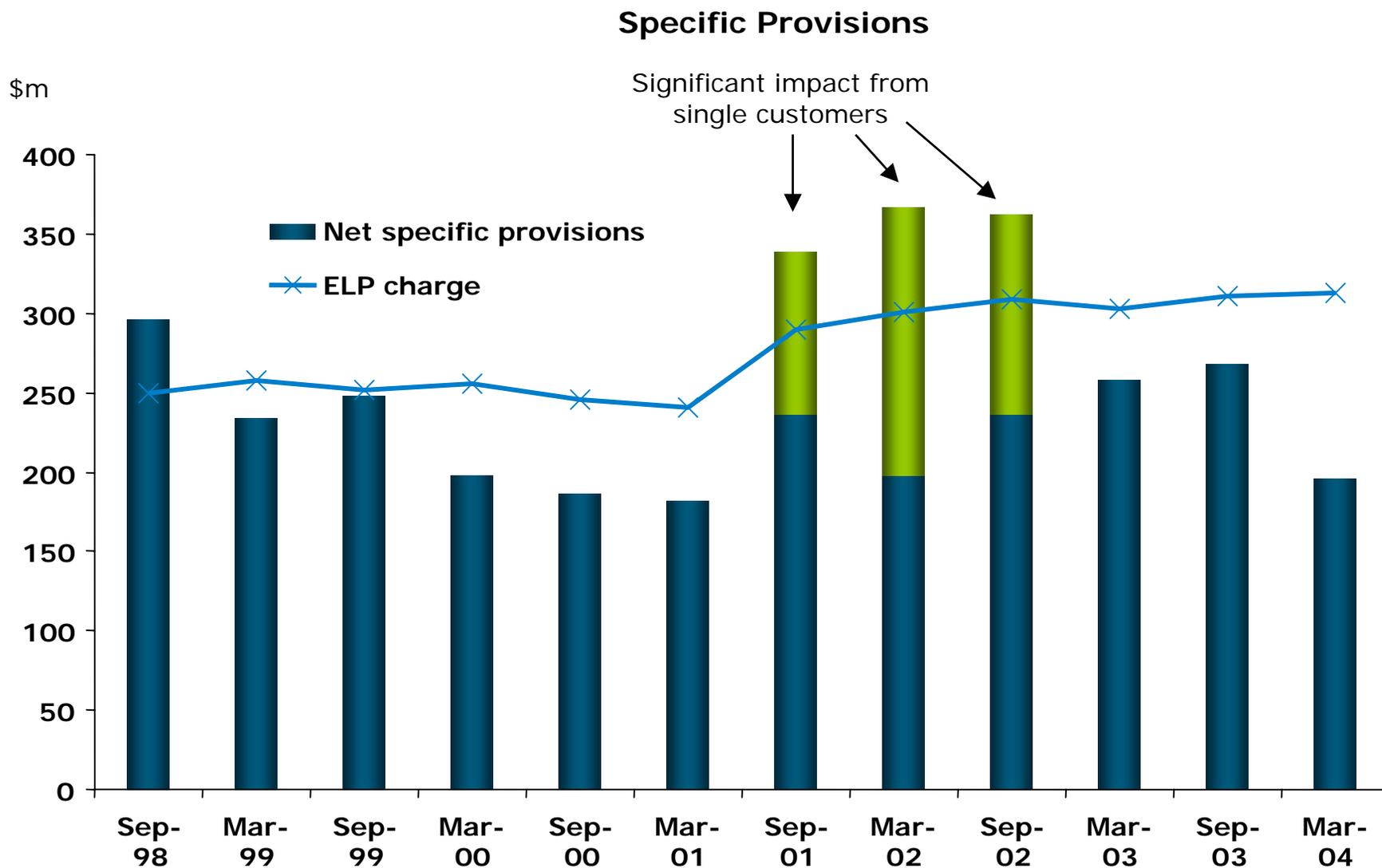
"Vega" limits specify the maximum loss an options book can sustain for a 1% shift in the underlying *implied volatility rate* - a key input into option pricing - e.g. from 12% to 13%.

Interest Rate Delta Limits

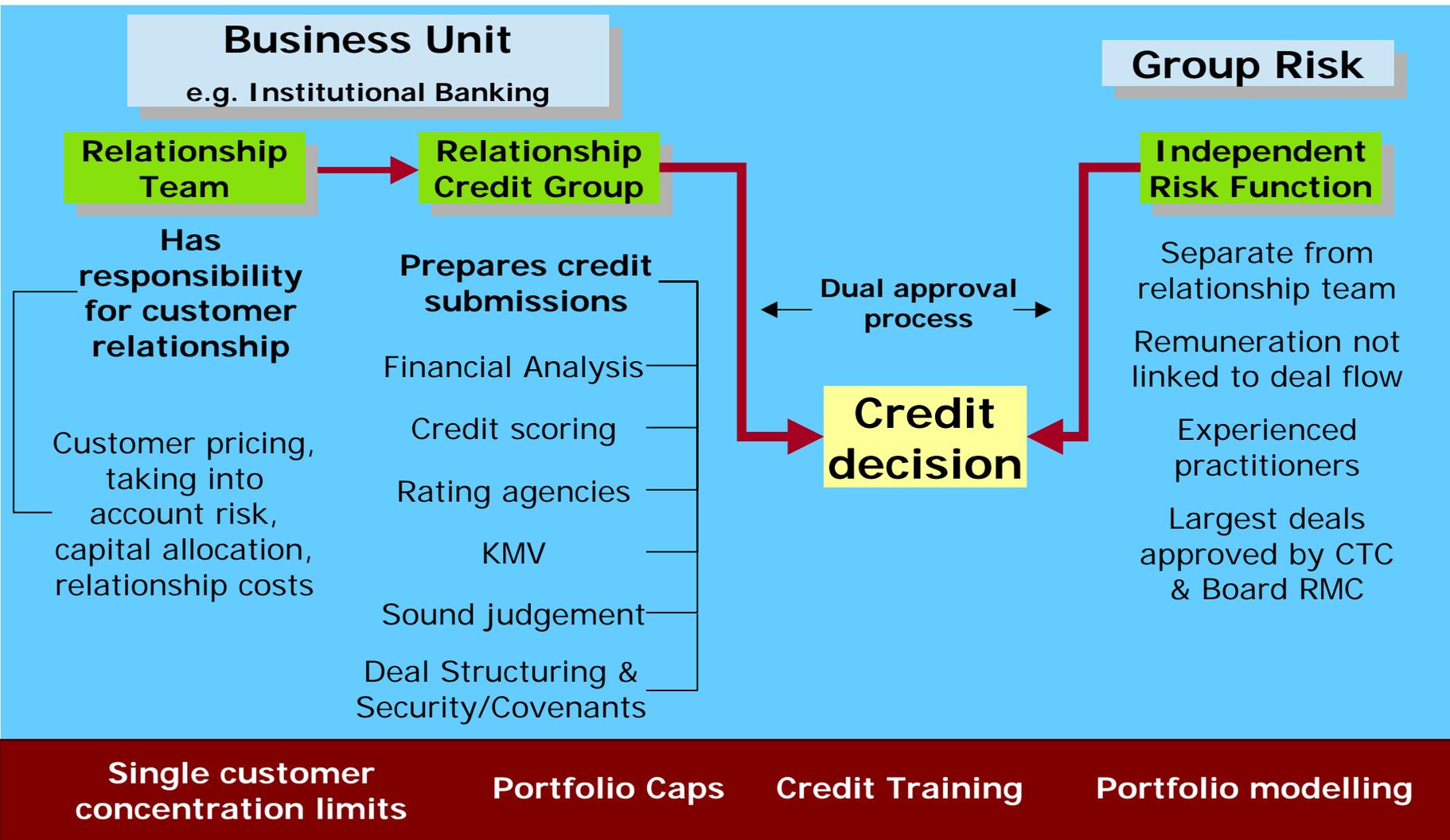
IR Delta limits are used to limit the interest rate risk position for each maturity bucket, for each currency portfolio. The interest rate "delta" is the dollar sensitivity of a portfolio to a one basis point shift in interest rates.

Credit Risk

Volatility in specific provisions generally driven by large single name losses



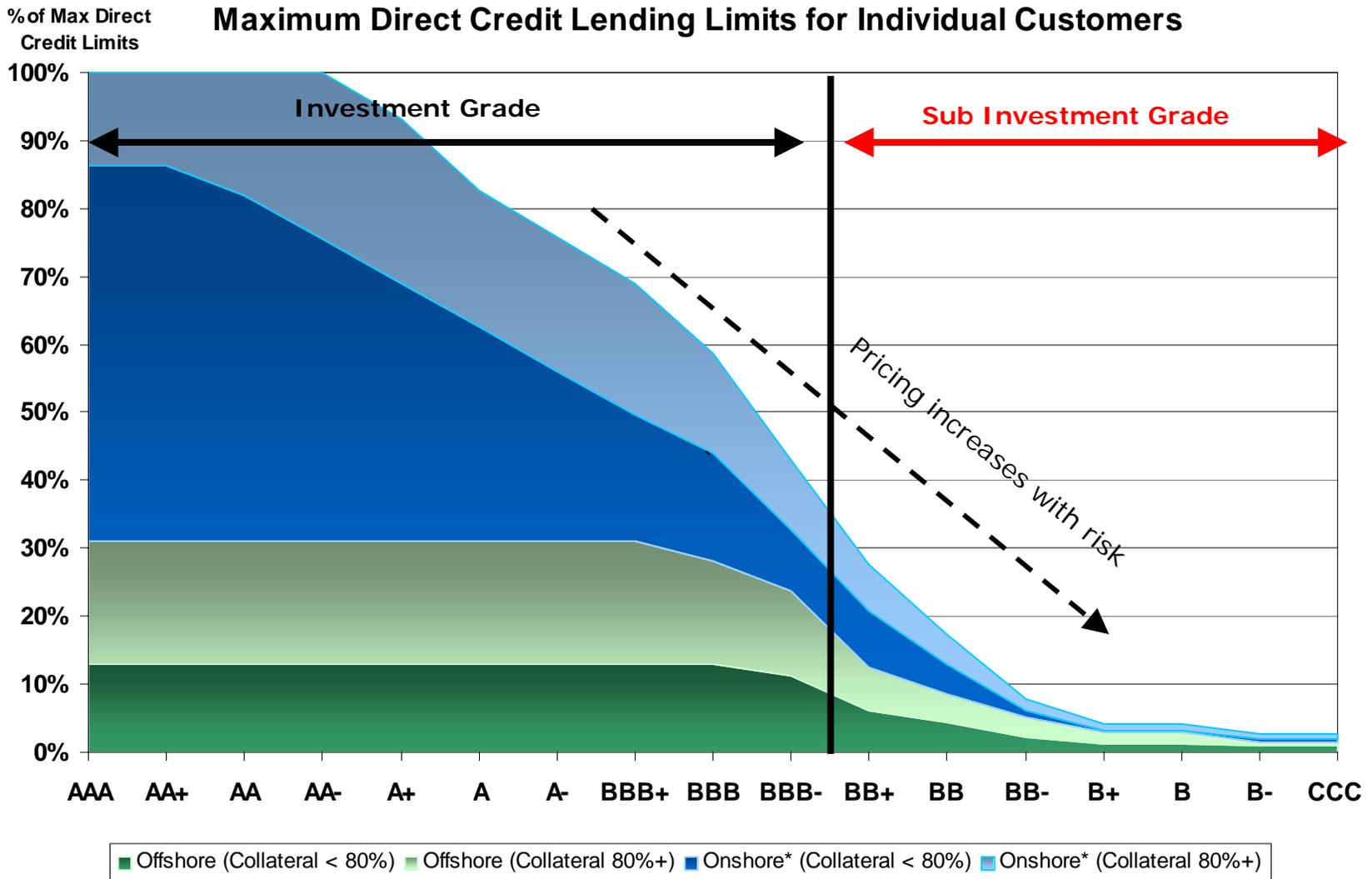
Larger loans require sound judgement, rating tools, and a dual approval process



Ratings tools are increasingly powerful

- ANZ customer credit rating (CCR) must be at or below the equivalent rating from a ratings agency
- KMV tool can be a useful early warning indicator. Policy in place now requires material movements in KMV rating be investigated and CCR signed off by credit chain
- ANZ's automated rating tool, aligned with Basel II, has been released internally via the Intranet to most Institutional and Middle Market points and is accompanied by strict, dual-approval policies
- ANZ utilises industry-accepted rating and capital allocation methodologies (Monte Carlo simulations) for its Structured Project lending book
- Additional models for the Institutional Banking market are being refined.

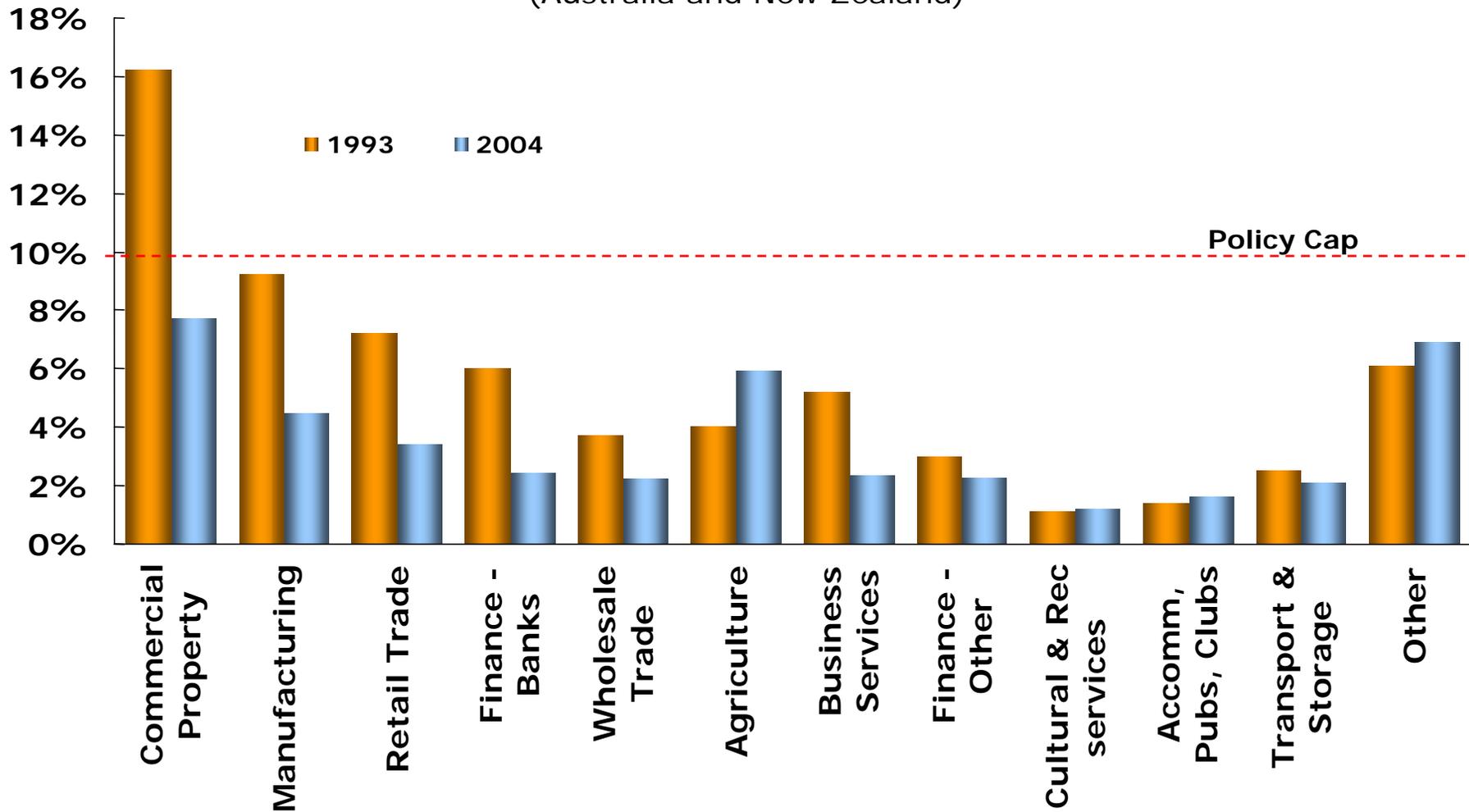
Single customer concentration limits are in place to cap single name exposures within the portfolio



* Customers classified as Global Offshore Corporates can borrow according to Onshore lending policy.

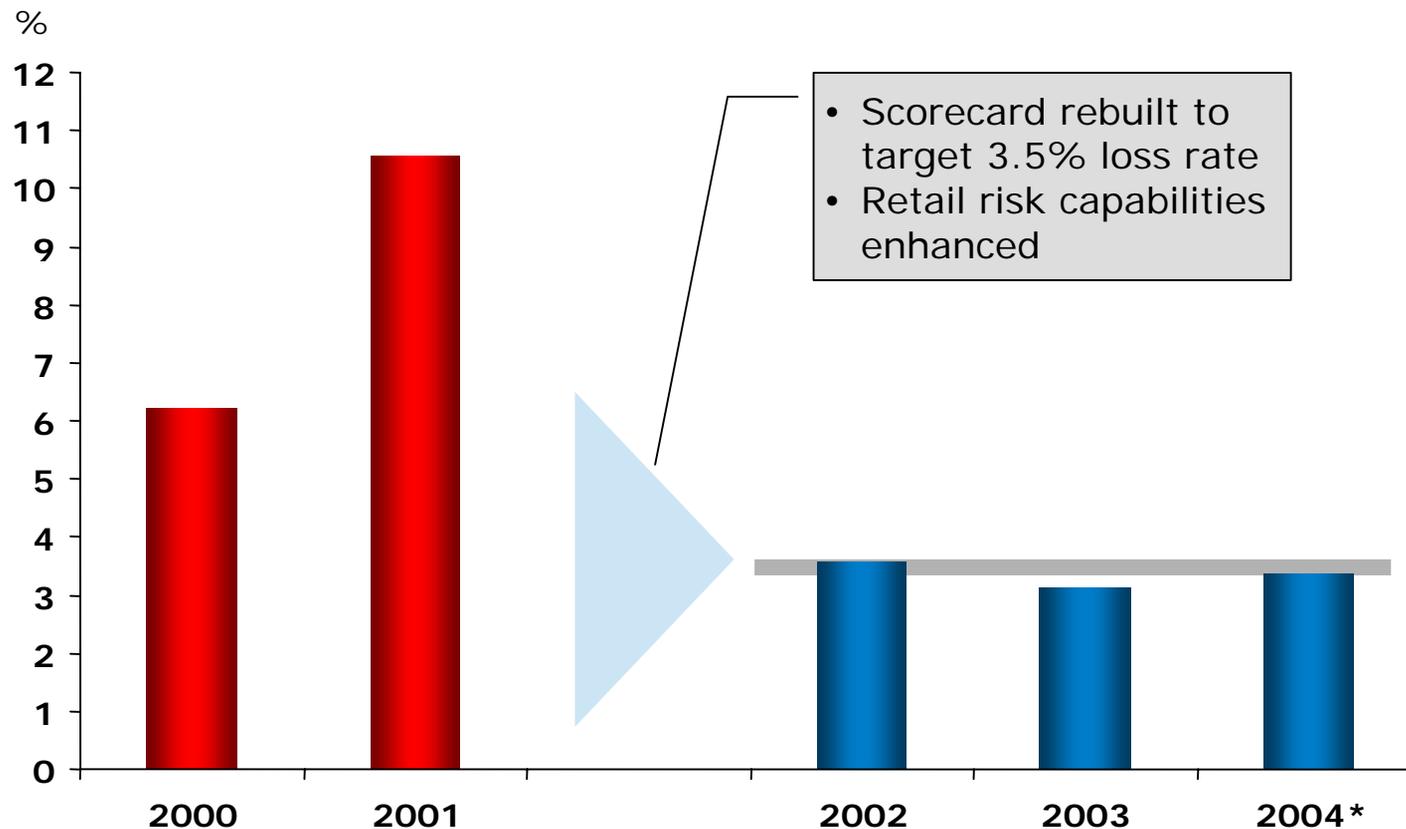
Portfolio caps also help drive diversification

% of ANZ Group Lending Assets
(Australia and New Zealand)



Credit Policies & "Scorecards": the key risk management tools in retail lending

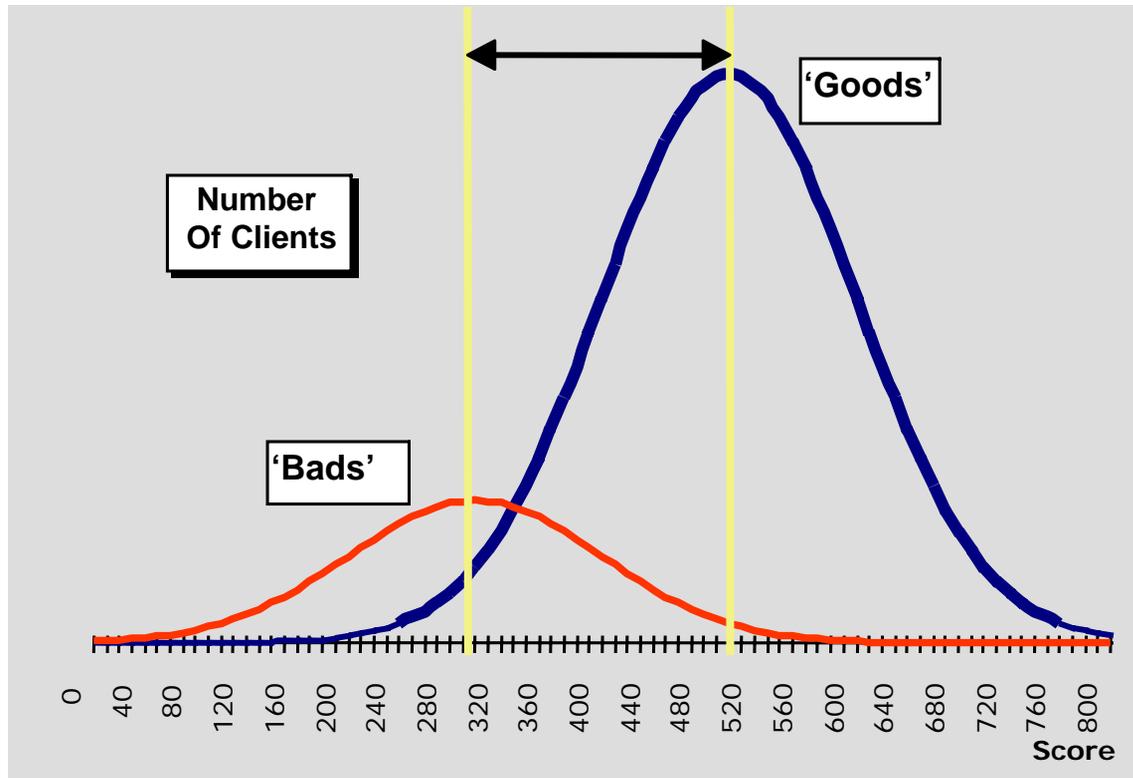
Write-offs in the personal loan portfolio



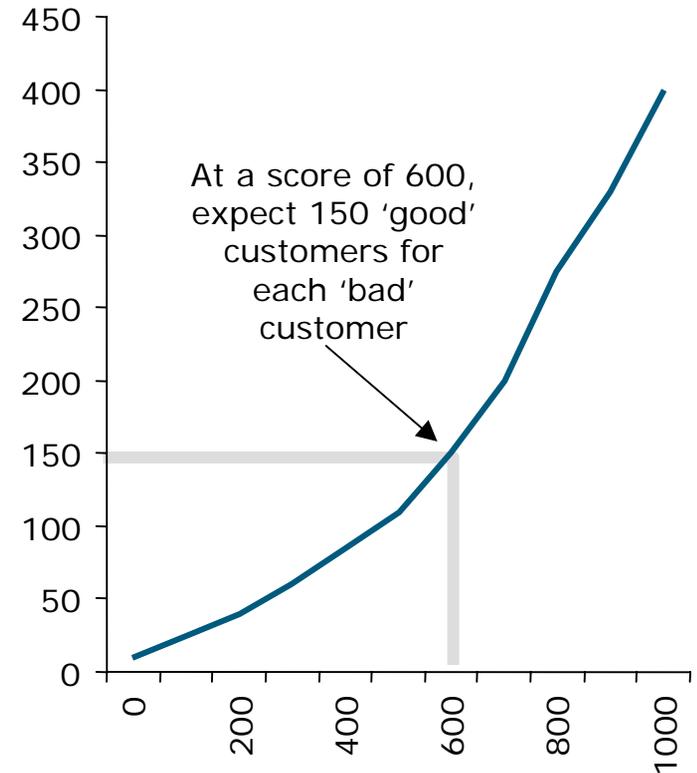
Key challenge: achieving the appropriate risk-vs-return trade-off

Scorecards aim to achieve an appropriate risk/return trade-off

Ratio of 'good' customers to 'bad' customers



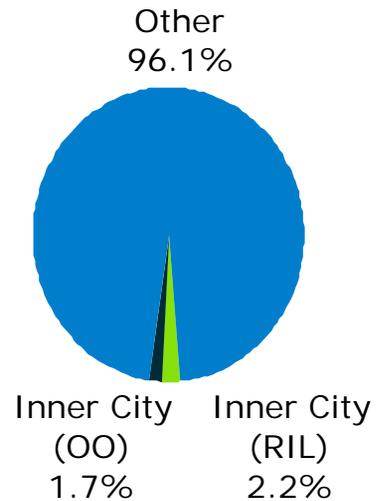
Ratio of 'good' to 'bad'



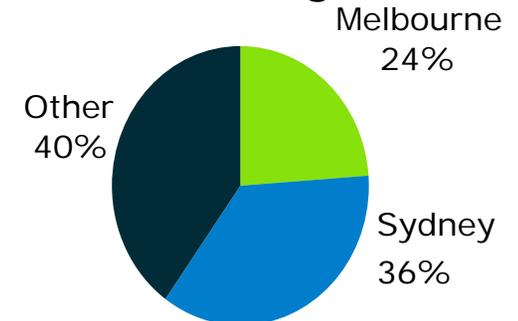
Low exposure to Inner City residential mortgage lending

- Total Lending for inner city property at 3.9% of Australian Mortgages portfolio, with 2.2% for investment purposes. Tight policies to control emerging risks include:
 - valuations required on all new properties
 - rental income allowable in debt servicing calculation 60%
 - non-inclusion of negative gearing benefit in serviceability calculation for first time investors
 - inner city is broadly defined, and extends well beyond CBD
- Exposure to Melbourne Docklands area ~0.07% of the Australian mortgages portfolio, or <2% of the inner city lending portfolio
- Delinquencies
 - only 16 inner-city customers nationally with arrears >90 days
 - no delinquencies in the Docklands and Southbank books

Mortgages Portfolio

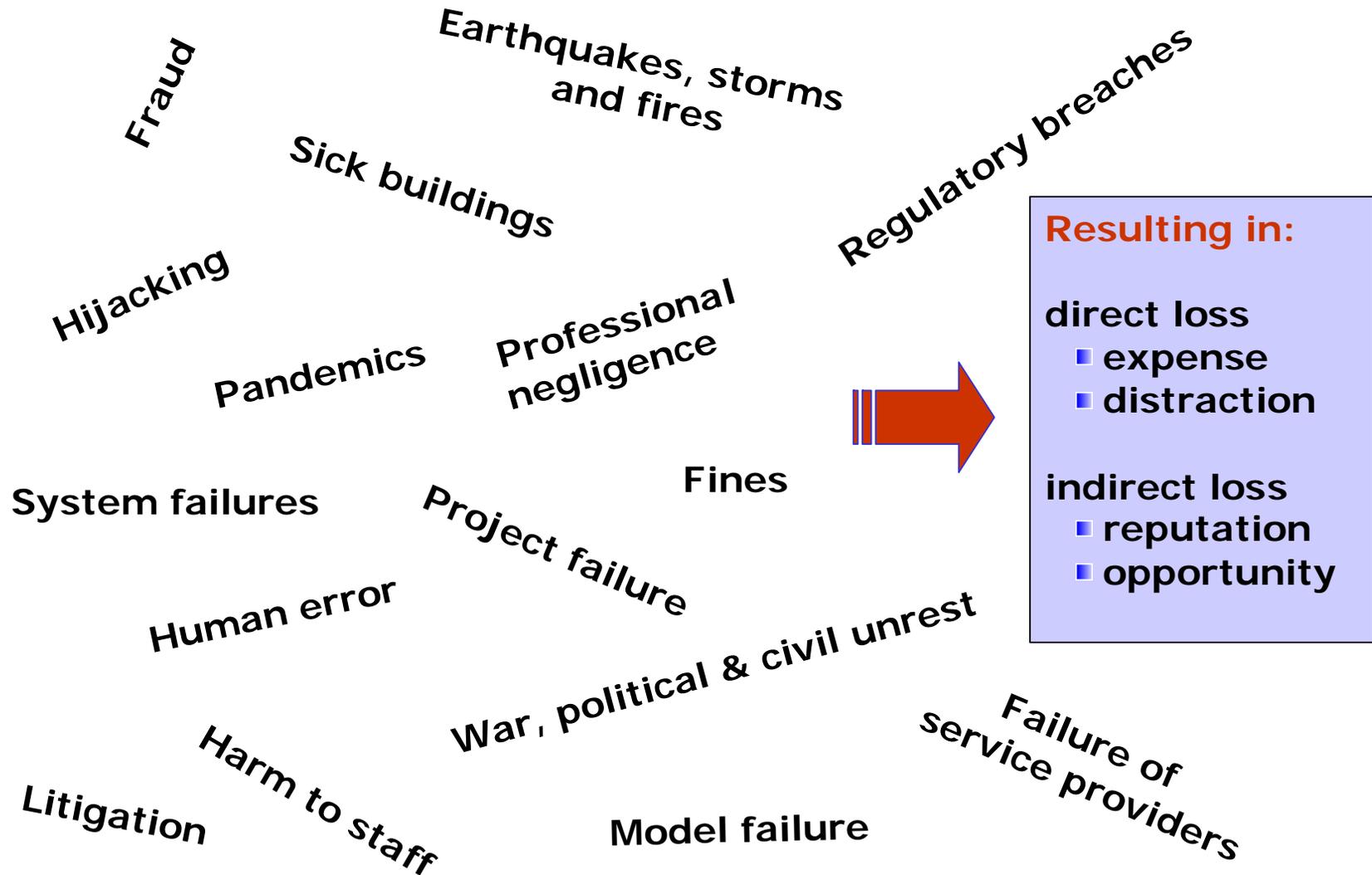


Location of Inner City Lending

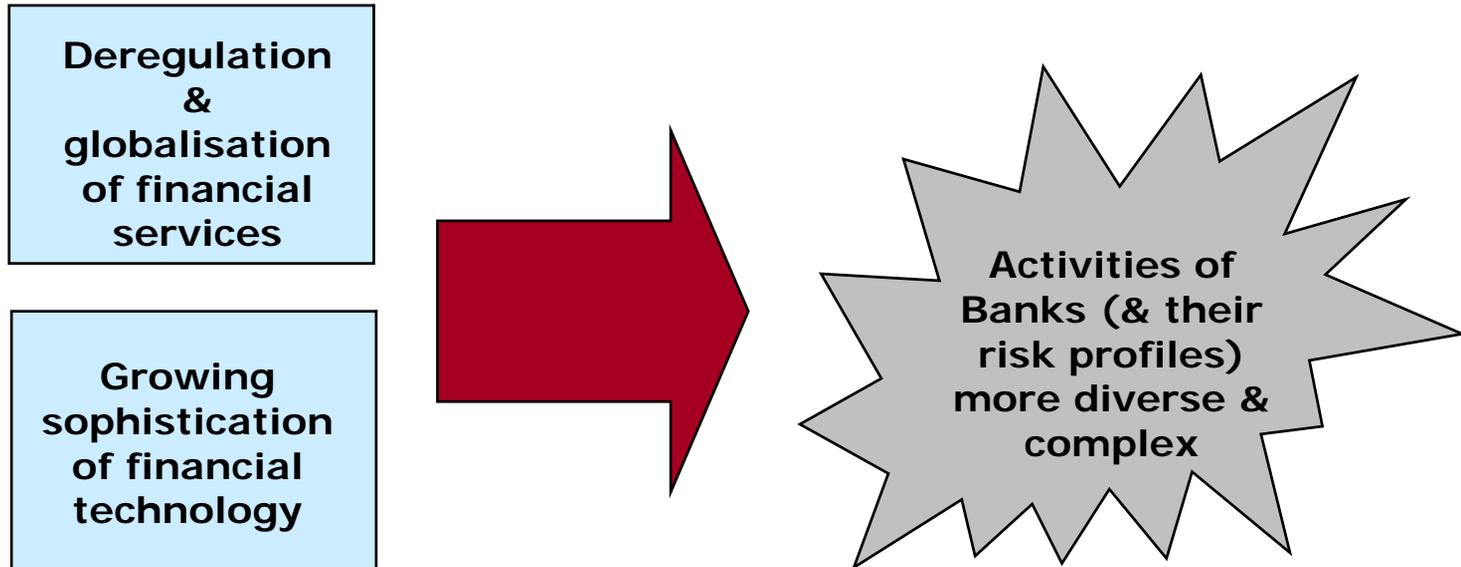


Operational Risk

The Oldest Risks?



More diverse & complex banking activities



- Recent experience makes it clear that risks other than credit and market risks can be substantial:
 - Barings
 - Enron
 - 9/11
 - Allfirst (Allied Irish)
 - Life insurance & pension mis-selling in UK
 - "Spitzer" issues - Underwriting/research conflicts + Mutual fund scandals (etc)

We are now seeing greater focus on Operational Risk by financial services providers, government & others...

Financial Services (Banks, Insurance Companies, Fund Managers)

- Specialist Operational Risk functions
- Framework, policy, measurement and monitoring
- Capital allocation for operational risk – now happening
- Loss, event and near-miss data collection & analysis
- Extensive, 'what if' scenario analysis
- Business continuity testing and crisis management training
- Executive and Board Risk Committees

Government

- Consumer protection
- Corporate Governance
- Basel II
- Sarbanes Oxley
- Standards & Guidelines

Others

- Sustainability
- Reputation indices
- Rating Agencies

Key Elements of an Effective Operational Risk Framework

Once Operational Risk is defined within the organisation, what are the other key elements the need to be designed and implemented?

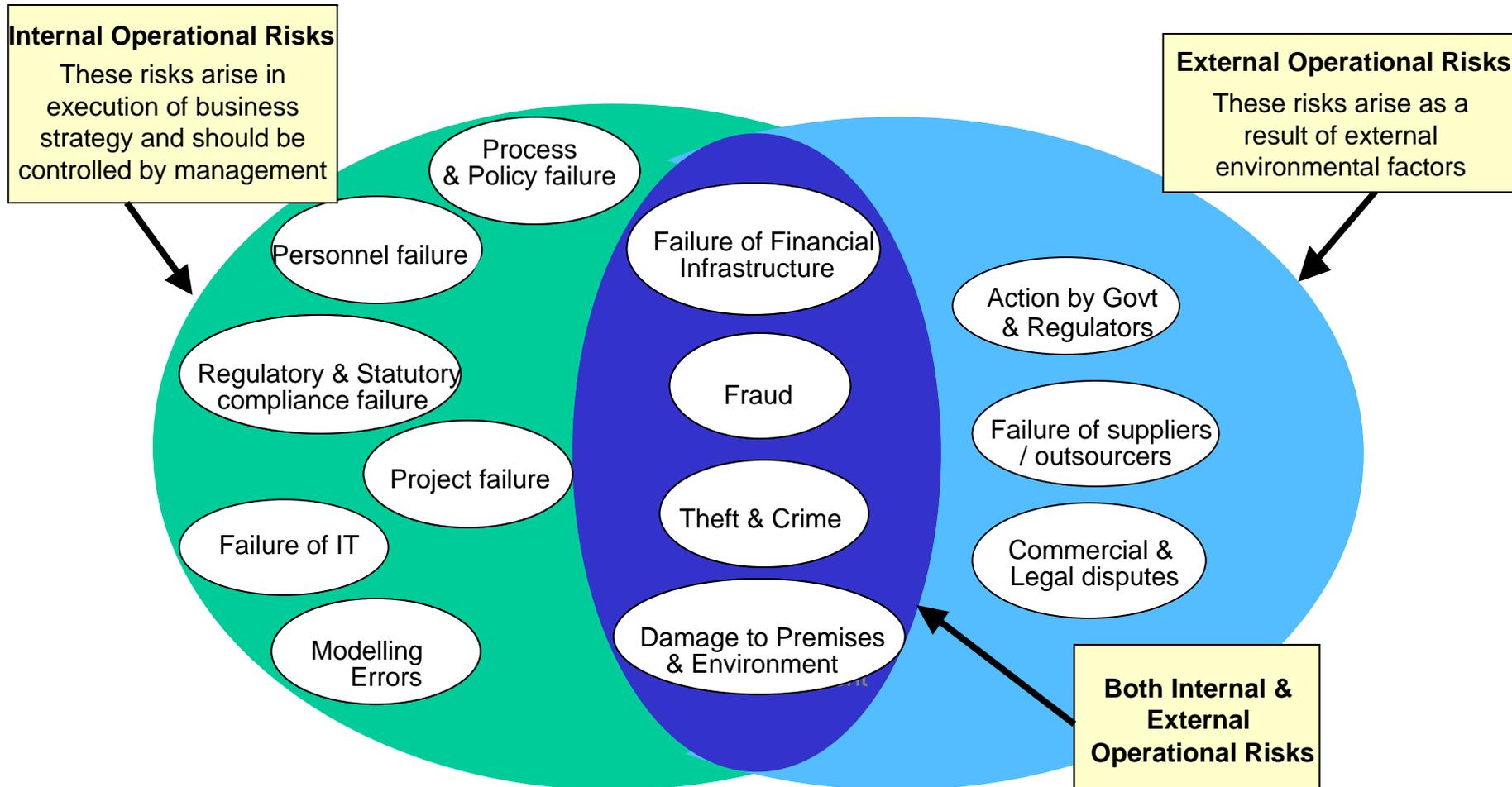
- Governance Structure
- Operational Risk Identification & Assessment methodology/process
- Operational Risk Measurement methodology
- Policies, procedures and processes for mitigating and controlling Operational Risks
- Process for the timely capture, analysis/monitoring and reporting of Operational Risks to key decision points within the organisation

These elements can be shown graphically as follows:

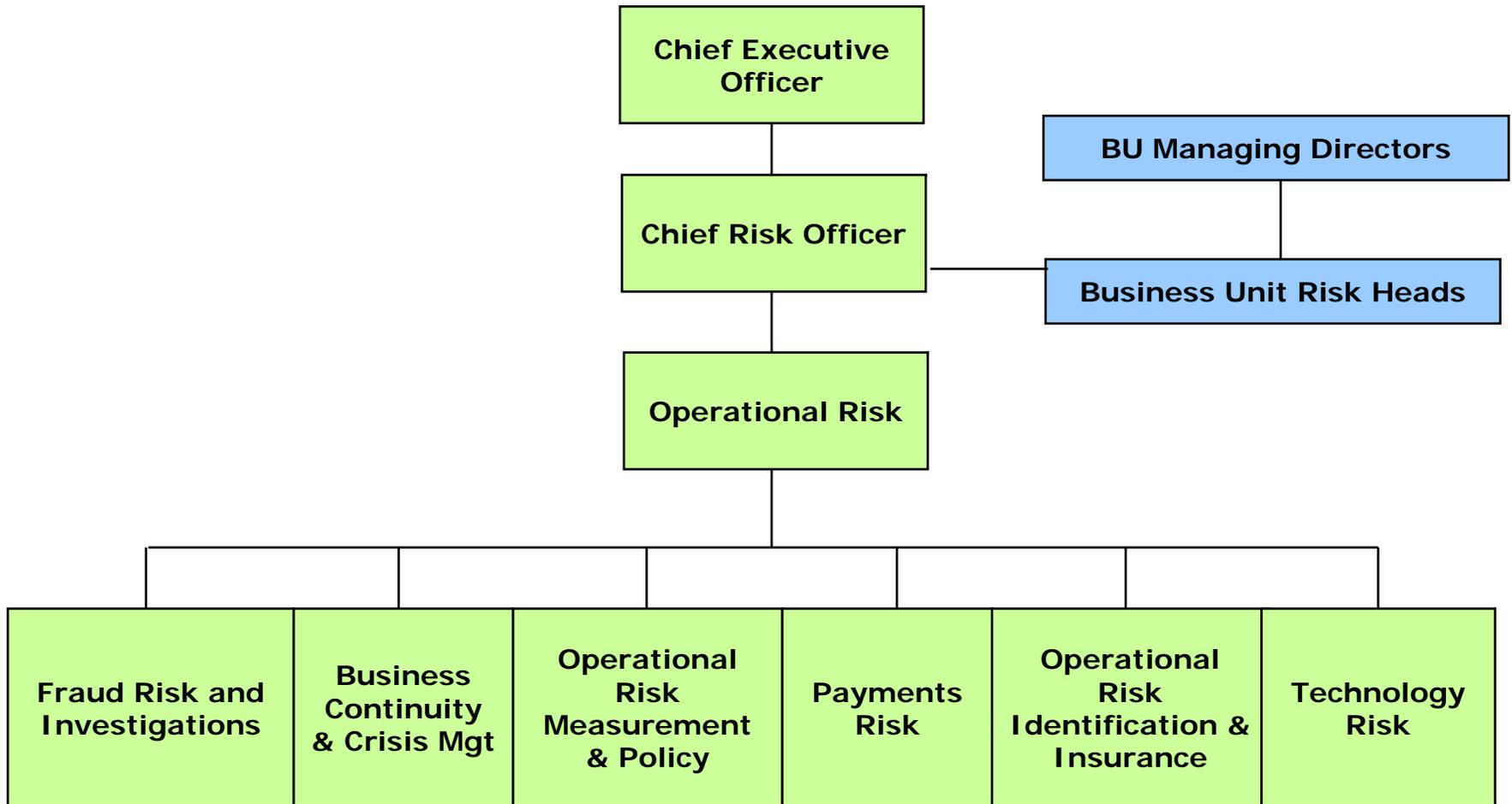


Operational Risk Categories

- A set of common operational risk categories have been adopted by ANZ, which further define what operational risk means in ANZ. These risk categories are represented below:



Central Operational Risk Management Structure



Impact of Basel II

Regulatory Capital for Operational Risk:

- Basel I (1988)
 - zero
- Basel II (2007 onwards)
 - substantial!

The Big Controversy!

- How much capital should be held for Operational Risk?
 - ~20%? (*Basel CP2, January 2001*)
 - ~12%? (*Basel CP3, April 2003*)
 - (*Other?*)

* *The magnitude of this shift illustrates the difficulty of the measurement challenge!*

The Difficulty of Measurement

- In recent years, we have seen the first serious attempts to measure operational risk... *really the birth of a new discipline*
- The industry has made great progress, but difficult questions remain:
 1. *What are the principal determinants of the level of Operational Risk?*
 2. *What are the key differences between Operational, Credit and Market Risks? Which statistical methods used to measure Credit and Market Risk are applicable to Operational Risk?*
 3. *When is historical loss experience a reliable guide to Operational Risk in the future? More generally, how can Operational Risk measures be made forward-looking?*
 4. *What is the role of historical information, including loss data?*

The Difficulty of Measurement

- The industry has made great progress, but difficult questions remain:
 5. *When is external information (including loss data) relevant? How should it be used?*
 6. *How should specific operational scenarios be incorporated in the measurement of Operational Risk?*
 7. *What about “Key Risk Indicators”?*
 8. *How can we incorporate an assessment of the quality of operational processes and internal controls into the Op. Risk measurement process? How important is this?*
 9. *What is the role of Senior Executive judgment in the Operational Risk measurement process? Where is the “right” balance between quantitative and qualitative factors?*
 10. *How can unexpected loss and capital be measured?*

Approaches to Measuring Operational Risk

Although “1,000 flowers are blooming”, there are 3 principal methods in use in banks today:

- Loss Distribution Approach (statistical)
- “Scorecard” or “Risk Drivers and Controls” Approaches (more qualitative)
- Scenario-driven methods

Regardless of which method is chosen, to qualify for AMA accreditation under Basel II, a bank must clearly specify how its method makes use of:

- Internal data
- External data
- Quality control assessments
- Scenarios

ANZ's Operational Risk Measurement Objectives (1999)

To develop an operational risk measurement methodology which:

- Directly connects risk measurement with the operational risk management process;
- Provides increased understanding and transparency of operational risk exposures;
- Provides a 'road map' for reducing risk; and
- Provides transparent incentives for banks to invest in internal controls.

“Risk Drivers and Controls” Approaches

- A “**Scorecard**” methodology refers to a class of diverse approaches to operational risk measurement and capital determination, which all have at their core an assessment of specific operational risk drivers and controls.

These can also be called “**Risk Drivers and Controls Approaches**”, or “**RDCAs**”.

- Such approaches are effectively expert systems, which assess:
 - *the level of a bank’s exposure to specified drivers of risk, and*
 - *the scope and quality of a bank’s internal control environment, key operational processes and risk mitigants,*

and directly link these assessments to risk capital.

Key Features of RDCAs

- A measurement framework designed to focus on the principal drivers and controls surrounding operational risks
- A series of weighted, risk-based questions by risk type or category
- Reflects the organization's unique operational risk profile by:
 - *Devising organization-specific questions*
 - *Calibrating responses to establish a range from "leading practice" to "ineffective"*
 - *Applying customized question weightings and response scores aligned with the relative importance of individual risks*
- The specific risk categories, customized suite of questions, weightings and scored response options provide business managers with transparent priorities for risk management improvements

Key Benefits of RDCAs

Business Line Involvement

- RDCAs leverage the collective operational risk knowledge of the organization
- Business line involvement underpins their “ownership” of the results.

Forward-looking

- RDCAs attract capital when vulnerabilities & weaknesses are identified
- RDCAs provide an objective evaluation of the level of each business unit’s risk drivers and further serves as an effective proxy for future risk.

Behavioural Incentives for Improved Risk Management

- Maximized if a direct linkage between capital charges and management performance is established:

E.g. Employ economic capital for operational risk within a RAROC or “Economic Value Added” (EVA) model, and use RAROC/EVA as the basis for:

risk-adjusted performance measurement and compensation

Key Benefits of RDCAs (cont.)

Transparency

- All risk assessments are explicit and transparent, especially to line managers, and are regularly subjected to managerial, audit and/or supervisory interrogation
- The linkage to capital is formula-driven, transparent and risk sensitive, reflecting risk profile changes.

Responsive to change

- Responsive to changes in the risk profile resulting from changes to the business mix or new operational risks
- *Before* losses are experienced (e.g. Information Technology Security risks)

Fully Integrated into the Operational Risk Management Process

- RDCA methodologies are fully aligned with the organization's operational risk management framework, thus ***directly linking the measurement and management of operational risk.***

Operational Risk Capital & Performance...

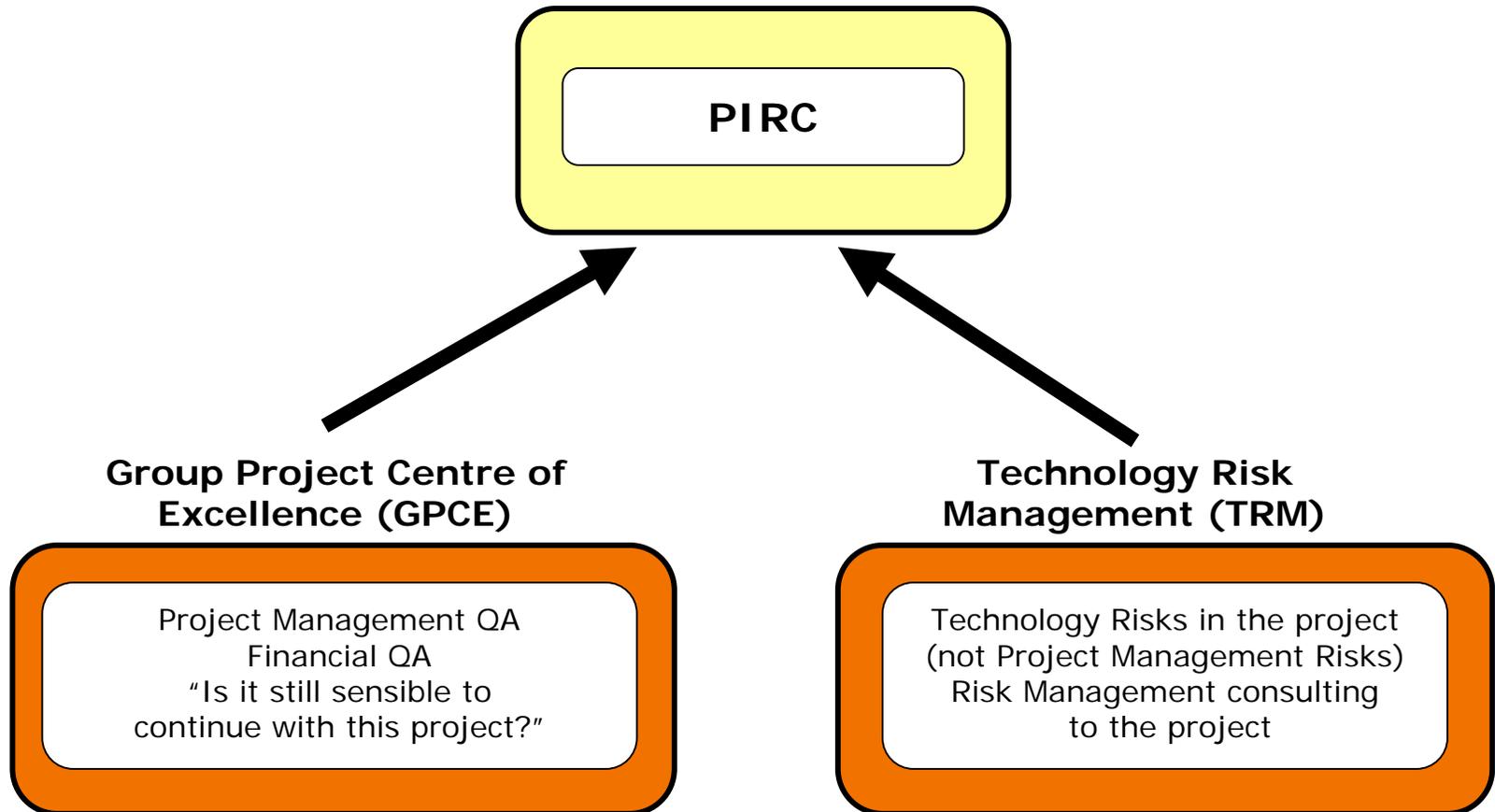
"...and one of the things I think that really does matter to this is the earlier introduction of EVA at the transactional and the customer level, means that we have a self-correcting mechanism that is in fact ensuring that risk comes down over time, without it being necessarily driven from the centre.

And in fact the fact we are one of the few banks in the world that allocate capital to Operational Risk in our EVA model, is also a leading edge indicator, which means that Operational Risks also get managed in the same way ...

And we think that's a very important device because it means that an individual decision that leads to a negative EVA does not get done."

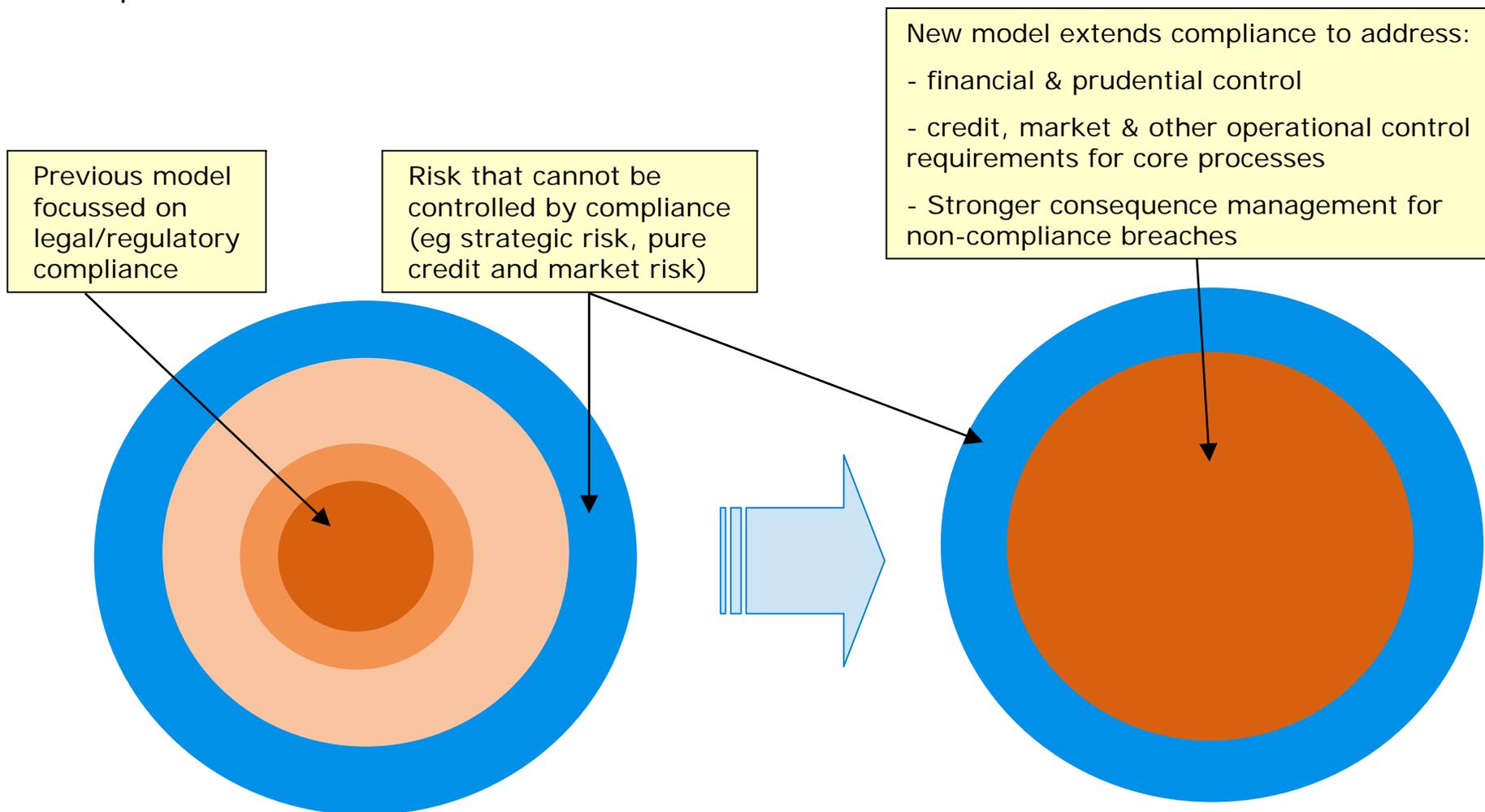
John McFarlane, CEO, ANZ Banking Group (25 October 2001)

We have also implemented a specialised framework for project risk management



Simplifying and strengthening Compliance: a holistic approach

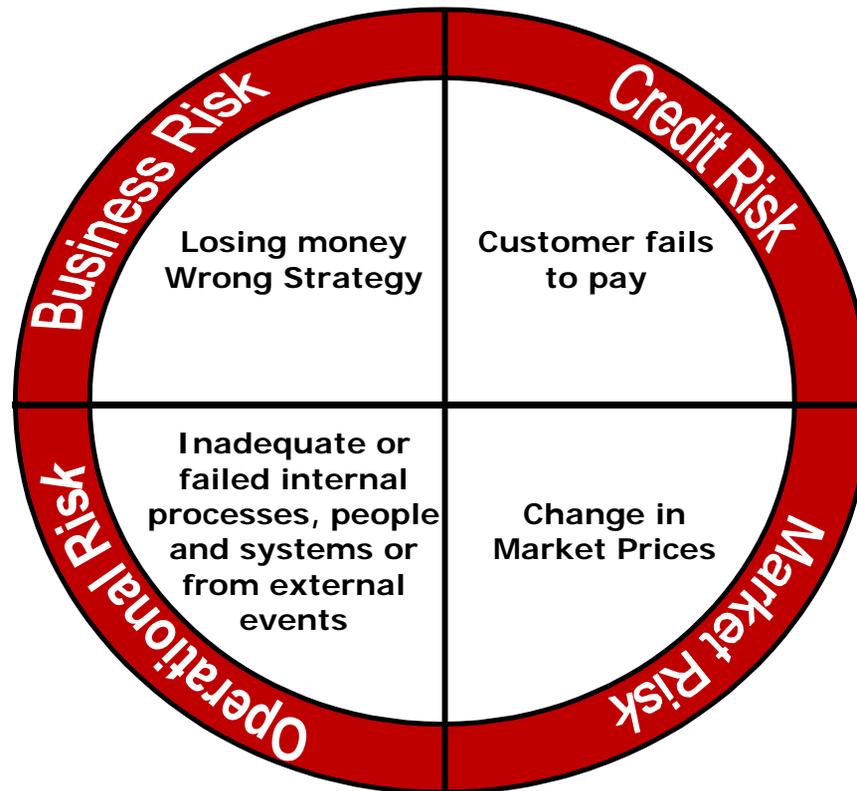
- Strengthening compliance oversight has been identified as a key component to achieving operational excellence.



Strategy & Business Risk

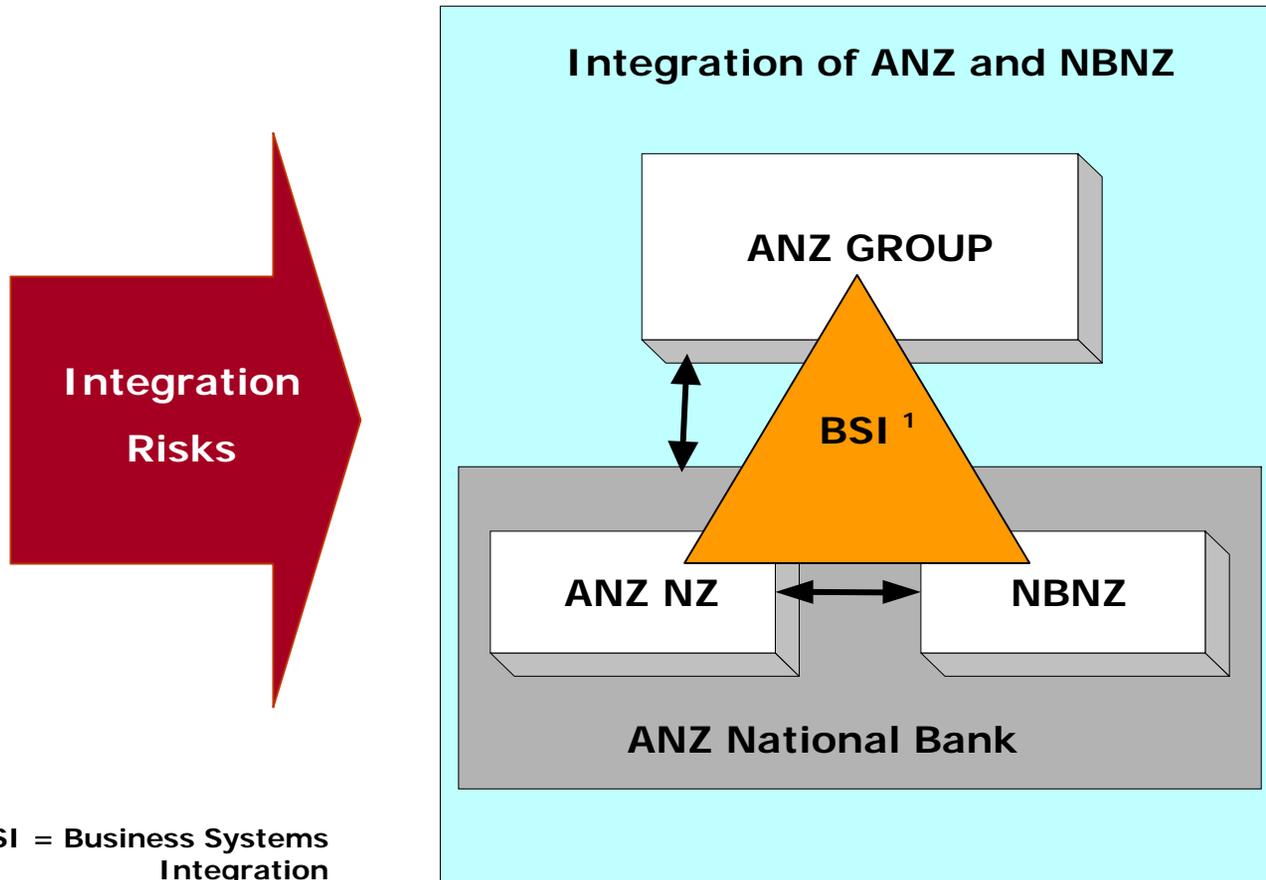
Strategy and Business Risks important risk dimensions

- Credit, Market and Operational Risks are now documented
- Strategy and business risk is now at the forefront of risk management capability
- Business Risk is the risk that value will be lost through the selection of specific business directions or through changes to the Group's overall business model.



Strategy and Business Risks: a differentiator for ANZ

- Group Chief Risk Officer is accountable to the Board for *oversight* of risk in the integration.
- Accountability includes the development of a framework that assigns accountability for the management of integration risks.
- Day-to-day management of integration risks is undertaken at a local level.



¹ BSI = Business Systems Integration

Strategy Engagement

Group Risk Management is formally involved in all strategic initiatives

- A substantial part of the bank's risk profile is determined by its strategy and growth initiatives
- "Best practice" risk management involves an independent group providing input into strategy development and key investment decisions, ensuring that all the risks are transparently reflected and properly understood at key decision levels
- At ANZ Group Risk Management is actively involved in key strategy developments and major investment decisions
- Specific engagements over the last 6 months have included:
 - Decision to acquire NBNZ
 - Establishment of a strategic alliance with the Shanghai Rural Credit Cooperatives Union

Capital Allocation, Risk-Adjusted Pricing, and Basel II

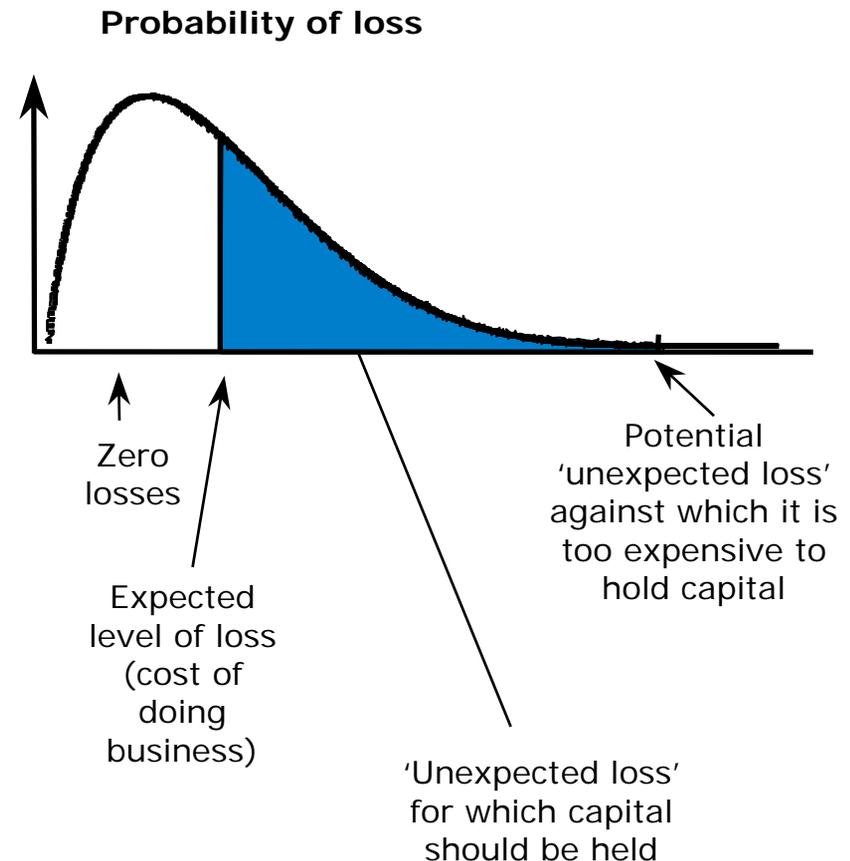
Economic Capital: Conceptual Framework

Conceptual Framework:

- Risk models employed to quantify economic risk are used to allocate economic capital - the amount of capital needed to support a bank's risk taking activities
- Credit risk capital allocation systems typically based on institutional estimates of their credit loss distribution
- Economic capital allocated to a particular activity reflects that activity's marginal risk contribution to the portfolio taking into account diversification

Applications:

- Measure risk adjusted profitability and ensure efficient usage of shareholder funds
- Portfolio risk management in the setting of limits & reporting of portfolio credit quality



Risk adjusted EVA based pricing methodology makes the risk/return trade-off explicit to relationship managers

Illustrative example

Component	Example	Source
Cost of Funds	6.00%	Funds Transfer Pricing Systems
Loan Loss Provision	0.53%	Credit Risk Models
Direct Expense*	0.15%	Product Cost Accounting Systems
Indirect Expense*	0.15%	
Overhead*	0.10%	
<hr/>		
Total charges before capital charge	6.93%	
Capital Charge	0.34%	
<hr/>		
Total Required Loan Rate	7.27%	

Capital calculation

Allocated equity/loan = 6.7%
 Opportunity cost of equity = 11%
 ("hurdle rate")
 FTP Benefit = 6%
 After tax capital charge = 0.067x
 (0.11 - 0.06) = 0.3%
 Tax Rate (imputation-adjusted) =
 0.108
 Pre-tax capital charge =
 0.3%/0.892 = 0.34%

* includes fixed and variable components

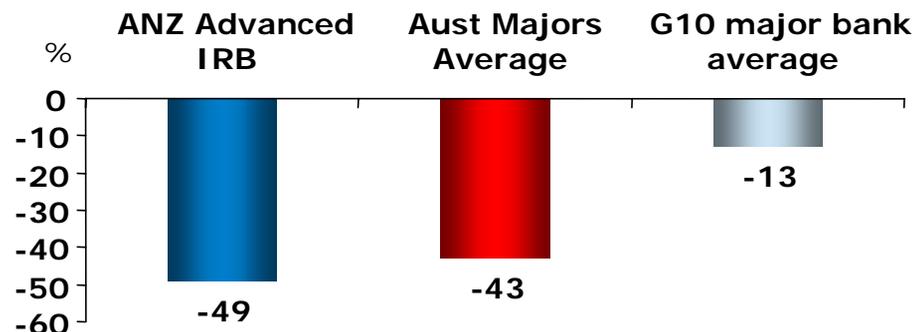
ANZ's Basel II Programme

- ANZ formally established its Basel II Programme in December 2001.
- Our objective is compliance with the Advanced IRB approach for Credit Risk and the AMA approach for Operational Risk.
- The Programme has, at its core, a central programme office, with multiple core projects and workstreams.
- The senior executive Steering Committee meets monthly to review status, and consists of senior business unit representatives and senior central function executives (e.g Risk, Finance and Technology), including several members of the Management Board.
- The evaluation phase was completed in 2003 and an independent Quality Assurance check by PwC placed ANZ in the top tier of Banks aspiring to be accredited at the more advanced levels within the new Basel Accord.
- The design and implementation phase of the programme is well underway with some key phases of the programme now nearing completion.
- Regular meetings are conducted with APRA to present programme progress and specific developments in the programme workstreams.

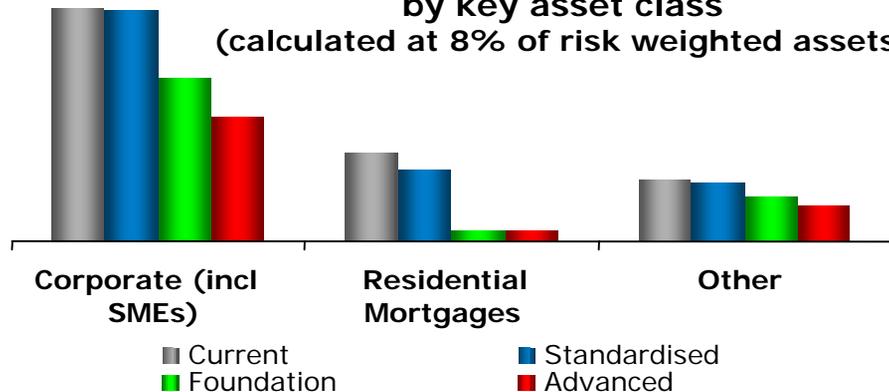
Basel II benefits

- QIS 3 - the first comprehensive survey of likely Basel II effects on Pillar 1 capital – forecasts large regulatory capital reductions for ANZ and other Australian banks.
- While based on Sept 02 data and CP2 capital formulae, it is directionally in line with what could be expected from the raw calculation of the minimum 8% capital requirement under Basel II.
- Nonetheless, ANZ is not expecting such drastic falls in regulatory capital to be permitted. Capital for Pillar 2 and potentially other add-ons will be required. However, we do expect a moderate fall in regulatory capital to flow (eventually).
- Principal benefits will flow from improved risk measurement and management infrastructure, further improvements to rating tools and other quantitative loss modelling, an enhanced corporate collateral management system, and improved data collection and integration.

Change in RWA under Basel II¹ QIS 3 results



ANZ Regulatory Capital under Basel II by key asset class (calculated at 8% of risk weighted assets)



Note:

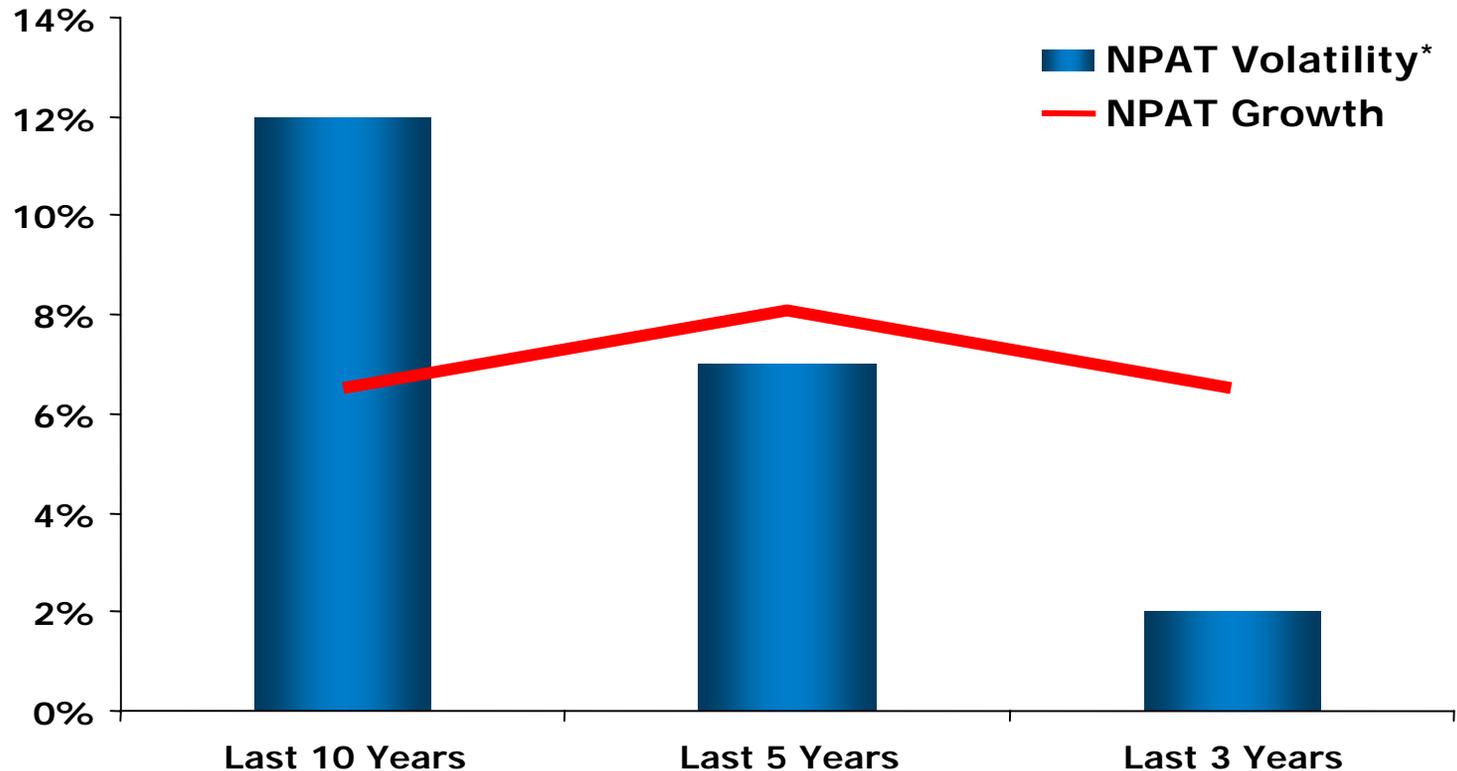
1. The reduction in RWAs using Advanced IRB outcomes (excluding operational risk) when compared with current accord capital requirements can be used as an indicator of the relative riskiness of a bank's assets.
2. RWA calculations were performed using the capital functions used in QIS 3. These are slightly different compared to the final Accord, but provide a reasonable guide.

We have transformed ANZ into a more sustainable, lower risk business

Reduction in risk and movement towards domestic consumer businesses

Has significantly reduced earnings volatility

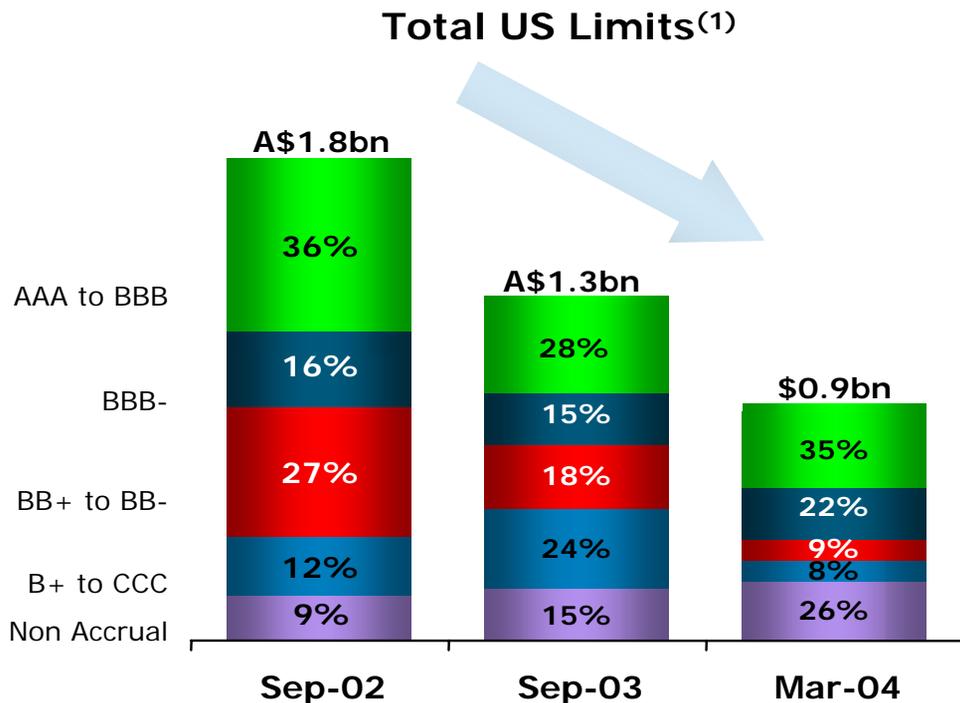
And has not had a material impact on group earnings



* Standard deviation in six monthly NPAT growth for ANZ, excluding abnormal/significant items

Supplementary info

US power exposures continue to reduce, although lagged credit effects continue to affect the portfolio



US: March 2004

- Outstandings: \$0.6bn (70%)
- Other Committed: \$0.2bn (25%)
- Uncommitted: \$0.1bn (5%)

Customers

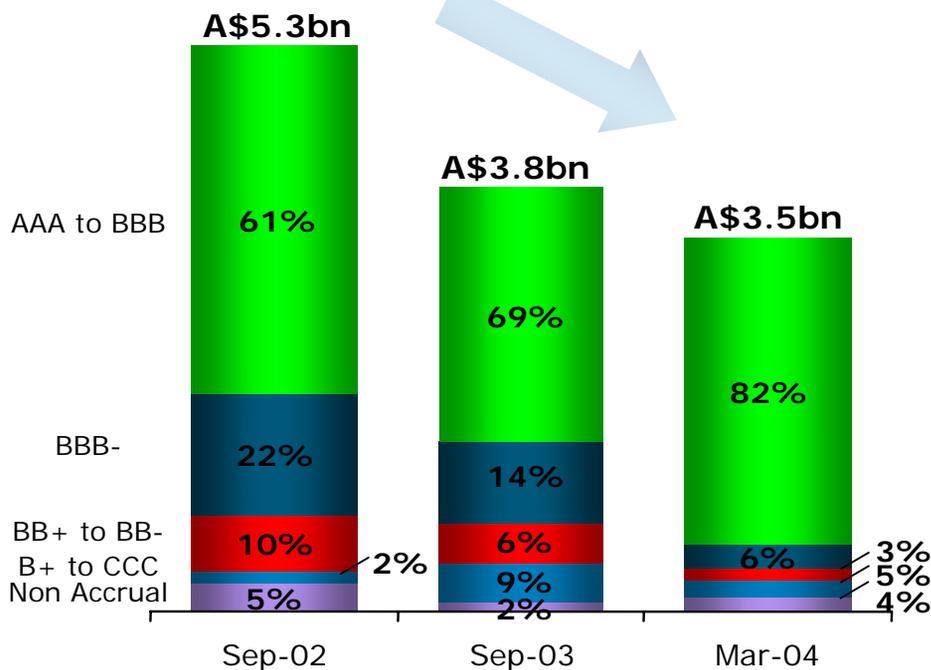
- Investment Grade: 10
- Non Accrual: 4
- Total: 19

- We continue to actively manage our exposure to the US Energy sector.
- Over the past 18 months, exposure to the merchant energy sector and other non-core segments has reduced substantially through repayments, sell-downs and restructuring.
- Whilst Non Accrual Loans have increased in the US portfolio as a result of the lagged credit effect, prudent management has resulted in a lower level of expected losses from the portfolio. Any further losses can be readily absorbed within existing ELP levels.

1. Excludes Settlement Limits but includes Contingent and Market-Related products domiciled in the US.

The quality of the Telcos book continues to improve

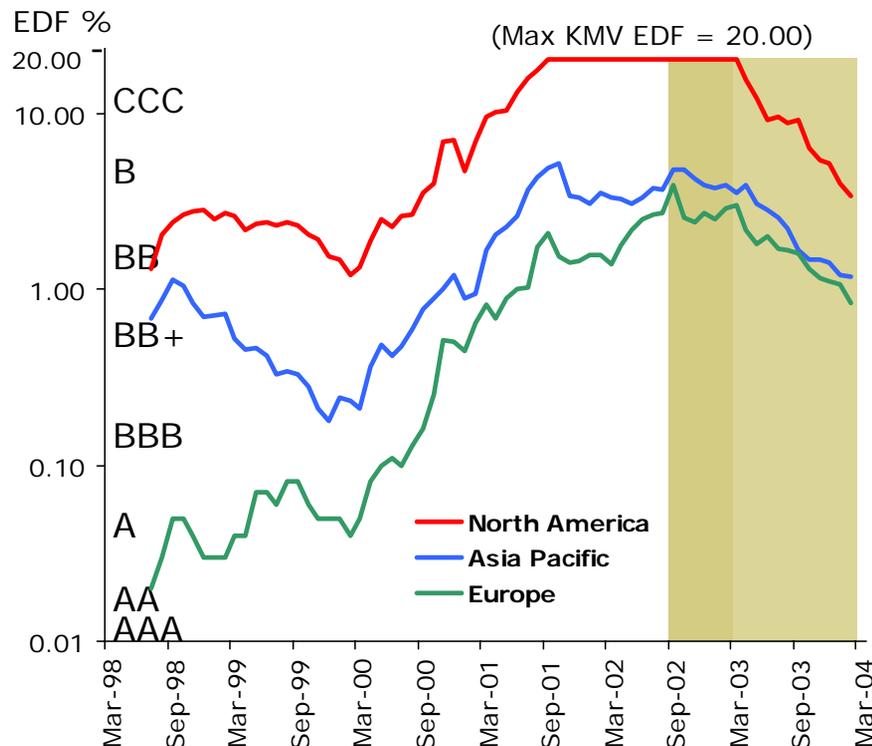
Total Telcos Limits⁽¹⁾



March 2004

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KMV Median Expected Default Frequency



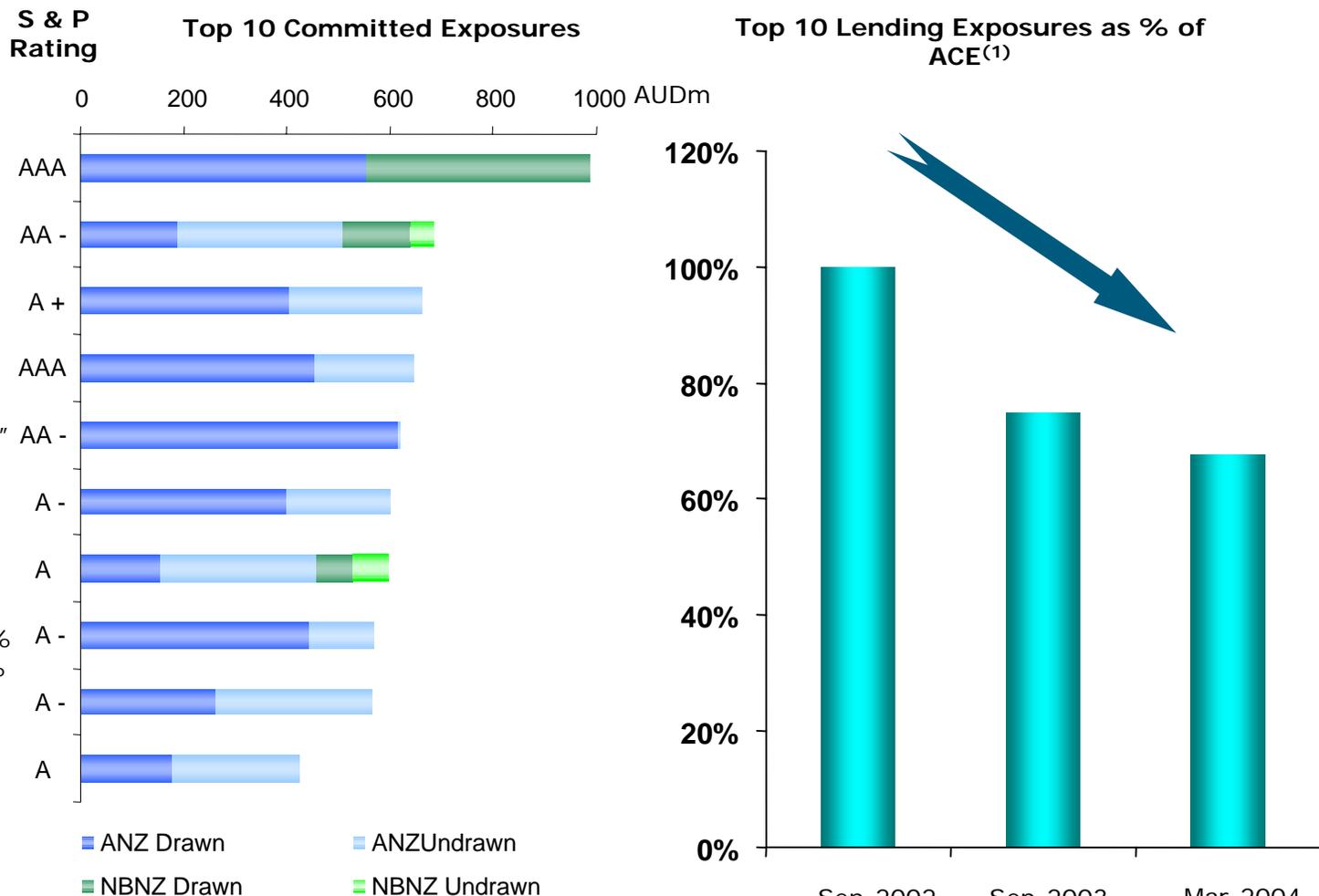
Note:

1. Excludes Settlement Limits but includes Contingent and Market-Related products.

Proactive reduction in volume of "Top 10" client committed exposures

- Implementation of credit management policies to diversify the loan book exposure, has resulted in reducing the client concentration risk, despite the inclusion of NBNZ exposures. This has been achieved through reducing the volume of "Top 10" client committed lending.

- Sustained management of client exposures has reduced the sensitivity of the capital base of "Top 10" clients (to 68% of ACE in March 2004 from 75% of ACE September 2003).



Note:

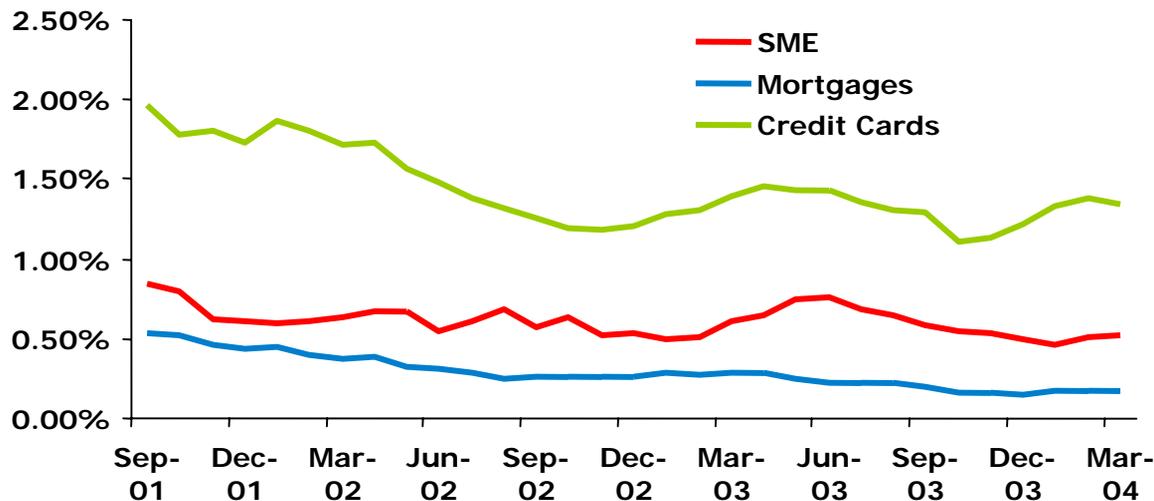
1. March 2004 derivative exposures were calculated using a Monte Carlo model to calculate ANZ's potential credit loss. The impact in moving to this methodology reduced the above ratio by 4.4 percentage points in comparison to ANZ's previous methodology.

Quality of Consumer & SME portfolios again better than expected

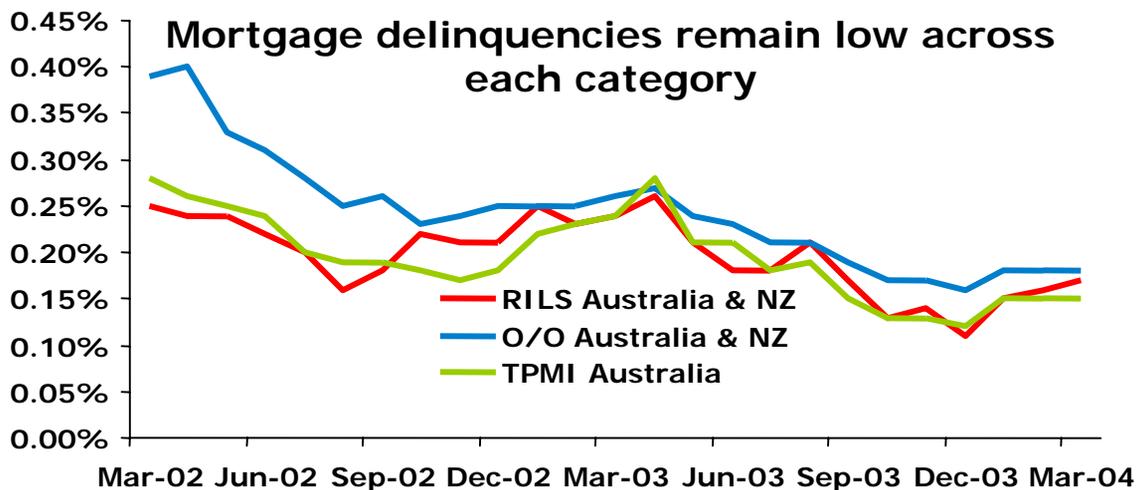
- Mortgage delinquencies (60 days) improved over the half
- Delinquency for customers new to SME since September 2002 is in line with delinquency on legacy SME portfolio
- Strong economic conditions and prudent credit practices have continued to see our Retail delinquency and loss rates remain very low

- Delinquency for Mortgage products have flattened over the half
 - delinquencies on RILs and Broker introduced loans have remained in line with the wider portfolio
- Australia's low unemployment rate should continue to help maintain the quality of the portfolio

Delinquencies down on March 03



Mortgage delinquencies remain low across each category



TPMI – third party mortgage introducers *Excludes NBNZ
O/O – owner occupied

The material in this presentation is general background information about the Bank's activities current at the date of the presentation. It is information given in summary form and does not purport to be complete. It is not intended to be relied upon as advice to investors or potential investors and does not take into account the investment objectives, financial situation or needs of any particular investor. These should be considered, with or without professional advice when deciding if an investment is appropriate.

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