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Mortgages : Offering Actuarial Insights

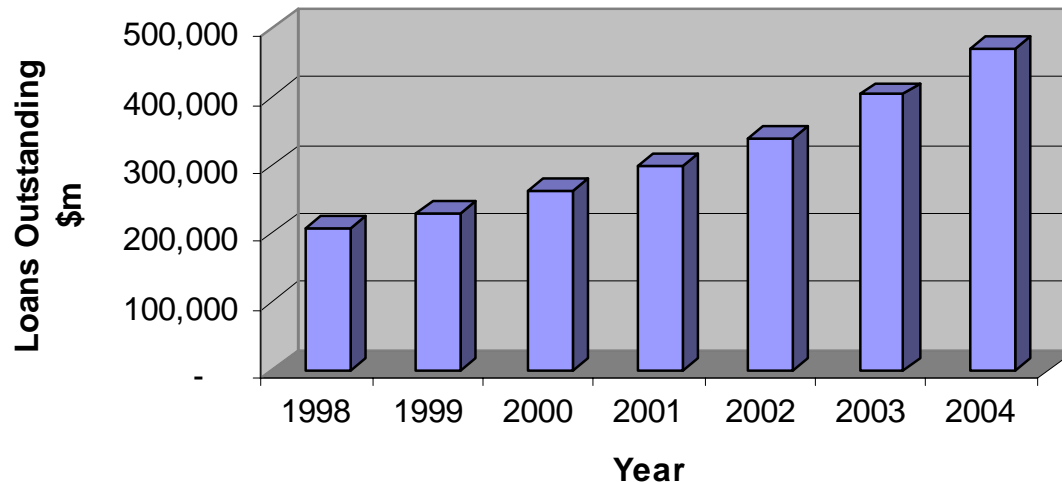
James Hickey BEc, FIAA

Mortgages : Offering Actuarial Insight

1. **Industry Overview**
2. Control Cycle Management
3. Run-Off Rates and Loan Life
4. Financial Modelling

Significant Growth in Past 5 years

Residential Mortgage Market



Source : RBA, Trowbridge estimates (excludes securitised loans)

Features of recent times :

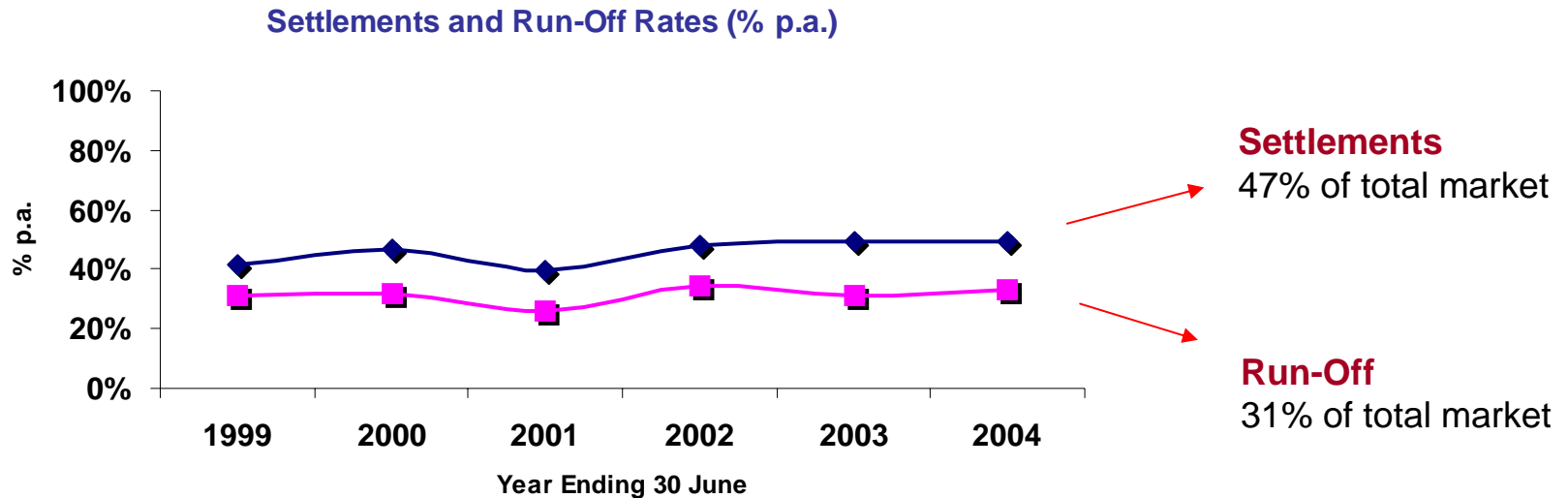
- 15% pa growth
- around 30%+ via brokers
- regionals strong growth
- credit unions slow to act



But fears of an industry downturn in settlements (10-15%)

.....Implications ? (margins, brokers, risks)

Buoyant Growth – in settlements and refinances



- 2004 : settlements \$200b, run-off \$133b
- Settlements are being supported by refinancing
- “Industry Cannibalisation”

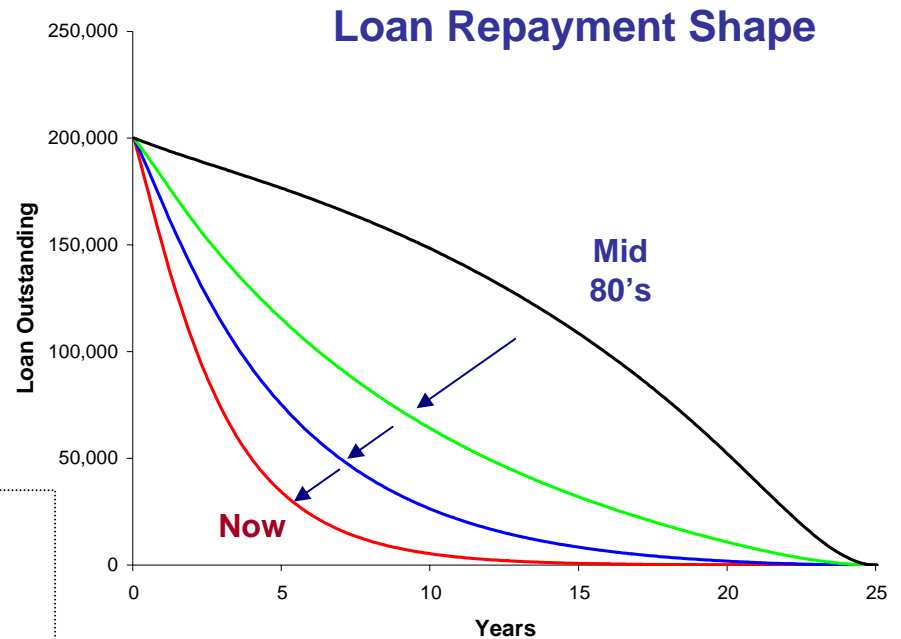
Loan Life Reducing : Industry chasing its tail

**Loan Life 3.5 yrs for new loans
(2.5 – 3yrs for existing)**

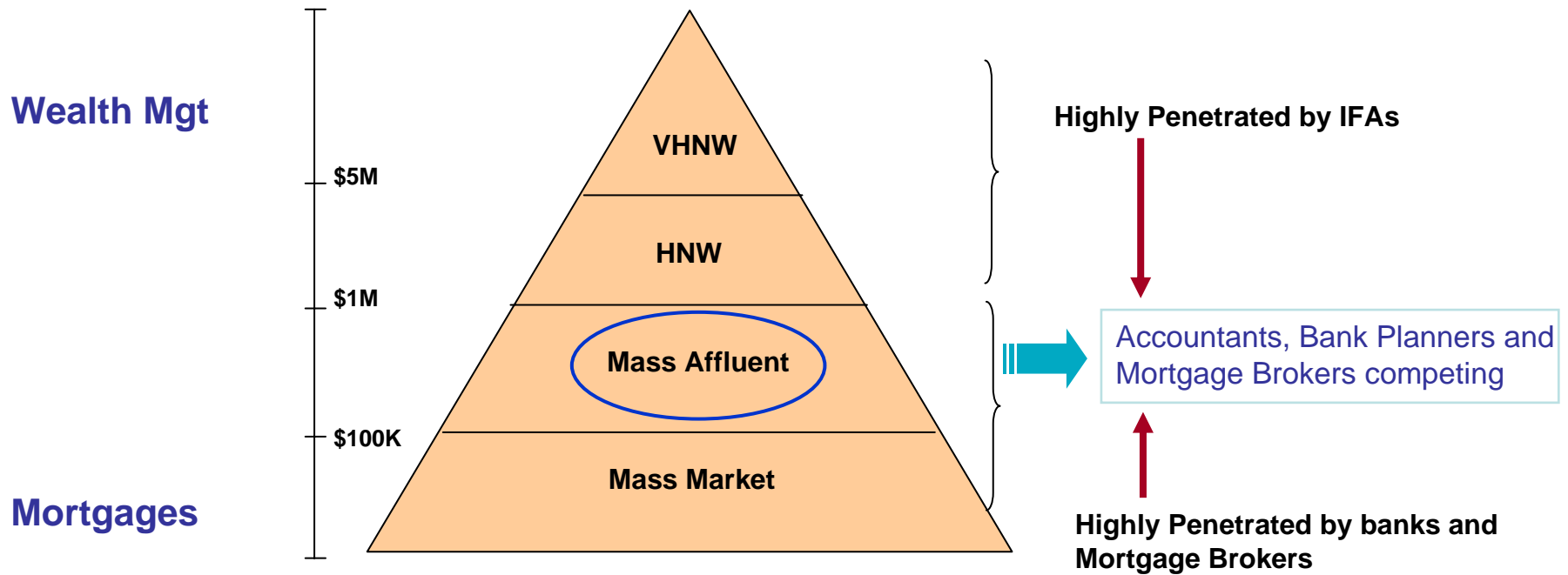


Compared to a 7 yr loan life :

- **lender income per loan 50% less**
- **need 2x as many settlements to offset**



Convergence of IFAs and Mortgage Brokers ?



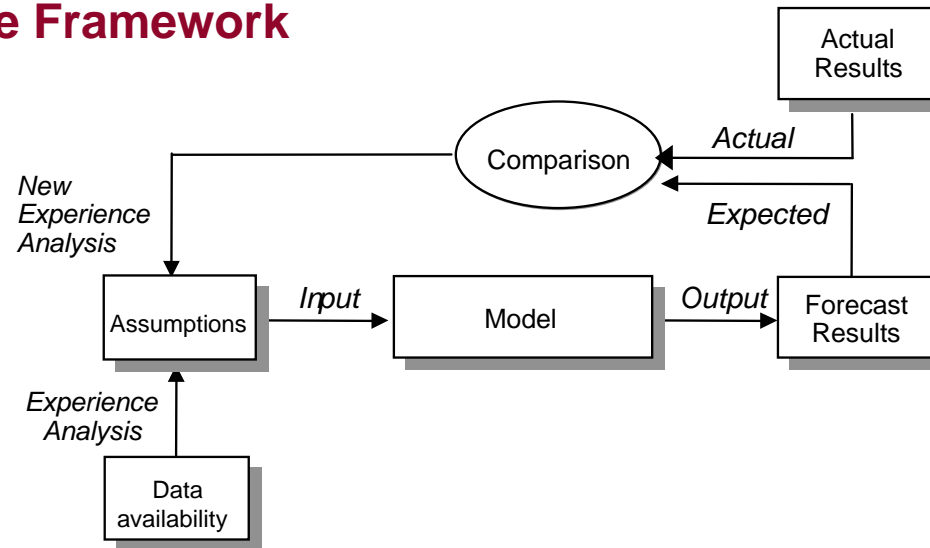
Source: Trowbridge Deloitte Analysis & Kelly, S., "Trends in Australian Wealth – New Estimates for the 1990s"
Paper presented to the 30th Annual Conference of Economics, Perth, Western Australia, 26 Sept 2001

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Actuaries can implement a “control cycle mentality”

Control Cycle Framework



- Major lenders well progressed in various stages
- Important to combine all aspects in holistic mortgage management

Actuarial opportunity to:

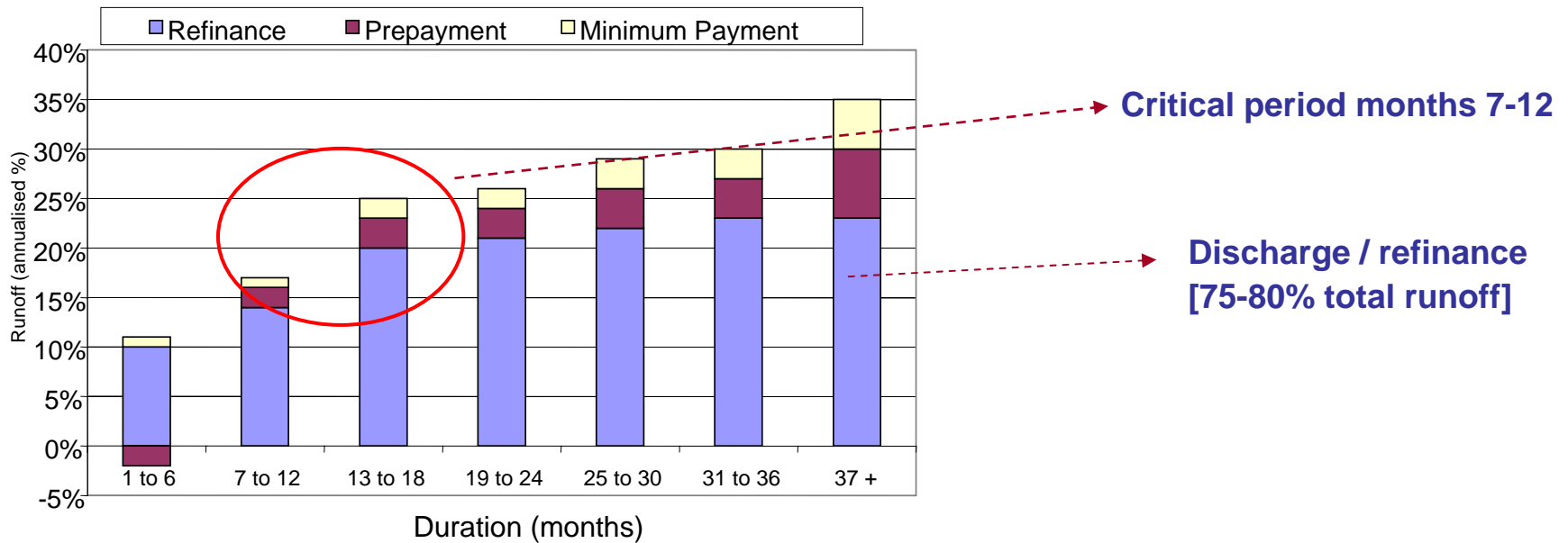
- combining the statistical analysis and financial modelling
- specialist input or review e.g. data analyses, run-off calculations, modelling, KPI tracking

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Retention : Driven by duration

Run-Off Profile



Lenders (and larger broker groups) analysing loan runoff by :

- Duration since settlement
- Customer attributes (eg age, income, geography etc) – i.e. “customer analytics”

Retention : “Analyse Carefully”A Client Case Study ...

- Total portfolio Run-Off rate (% of original loan) :

Branch	Closure Rate (%pa)	Broker	Closure Rate (%pa)
Branch 1	27%	Broker A	24%
Branch 2	33%	Broker B	27%
Branch 3	22%	Broker C	25%
Branch 4	27%	Broker D	23%
Branch 5	30%	Broker E	29%
Total	24%	Total	25%

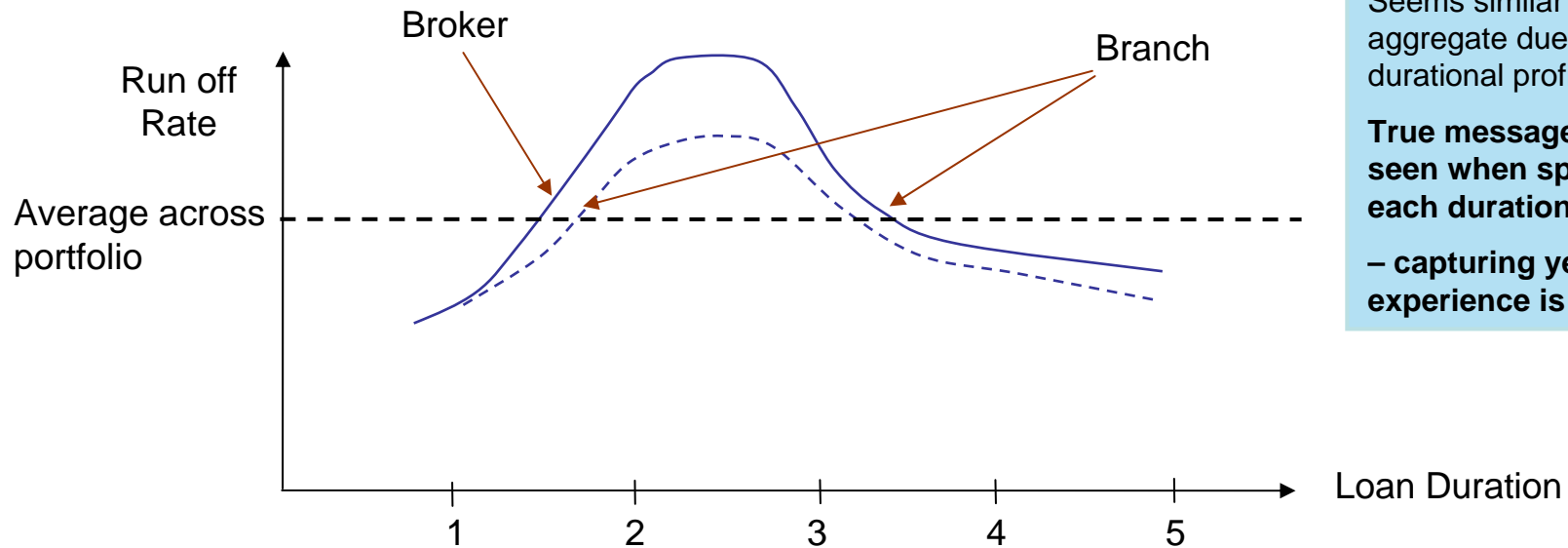
Top 5 Based on Closure amounts

- **seems two channels not dissimilar ...**



Need to Analyse by Duration

Expect this pattern



Seems similar in aggregate due to durational profile

True message only seen when split by each duration

– capturing years 2-4 experience is critical

Portfolio Split	1yr	2yr	3yr	3+yr	Total
Branch	30%	25%	15%	30%	100%
Broker	45%	35%	15%	5%	100%

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Mortgage Value Chain – bank margins reducing




	Bank			Customer
Revenue	15-20 bp	75-85 bp	60-70bp	150-175bp
Cost- Income	80-100%	40%	80-90%	60-65%
Net	0-5bp	45-50bp	5-10bp	50-60bp
Broker				
Add'tl Cost			(0-20)bp	30-50bp

(0-20)bp

Depends on ability to achieve :
higher volumes, higher average loan and eliminate costs

Bank margins under pressure

- Recent St George, Westpac results, BoQ position on brokers
- Considering broker remuneration terms & own expense base
- Focus on  valuable customer, retention quality & eliminate bank costs

Financials Vary by Channel and Retention

NPV of Home Loan Profits

Branch	Product	Interest margin	Repayment Period			Term
			1	3	5	
	Basic	1%	(504)	780	1531	2489
	Premium	0.7%	(686)	180	680	1285
	Honeymoon	0.5% / 1%	(807)	321	1079	2089

Broker (same retention as branch)	Product	Interest margin	Repayment Period			Term
			1	3	5	
	Basic	1%	(932)	5	548	1217
	Premium	0.7%	(1113)	(595)	(301)	16
	Honeymoon	0.5% / 1%	(1234)	(455)	94	802

Broker (lower retention 20% discharge)	Product	Interest margin	Repayment Period			Term
			1	3	5	
	Basic	1%	(949)	(163)	199	488
	Premium	0.7%	(1333)	(684)	(488)	(342)
	Honeymoon	0.5% / 1%	(1237)	(596)	(231)	70

Assumptions
Account balance \$150,000
Discharge rate 10% p.a.
Broker commission 0.6% upfront 0.25% trail
Initial costs Branch : \$1500 Broker : \$1000

Retention (ie loan life) is a critical determinant of value

Acquisition : Targeting Valuable Customers

Customer	Customer profile				NPV	NPV / Acc. balance
	Account balance	Interest margin	Prepayment rate	Discharge rate		
Professional	500,000	0.7%	100% after 4 years	0% p.a.	\$5521	1.1%
Average	250,000	1%	5% p.a.	10% p.a.	\$3819	1.5%
Battler	100,000	1.1%	0% p.a.	5% p.a.	\$1955	2.0%

In this scenario :

it is better to target a \$500m portfolio of “Battlers” (value of \$9.8m)

than it is to have \$500m portfolio of “Professionals” (value of \$5.5m)

Value of a Loan Book comes down to ...

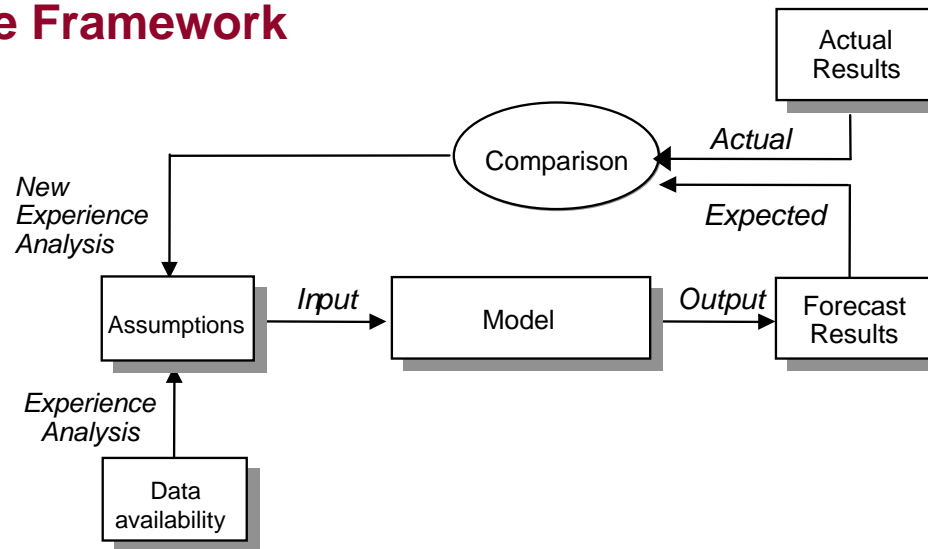
- **Financials** - commission levels; expense coverage; economic cycle
- **Portfolio Statistics** - size, product mix, LVR etc
- **Customer profiles** - behavioural characteristics – linked to discharge etc
- **Retention capabilities** - influence over retention decisions
- **Distribution access** - breadth, depth of customers and quality of brokers
- **Value Chain** – control over front end margin; margin expansion

Client Example : Expenses

- valued a loan book on a “fully costed” basis
- **expense analysis** performed to split settlement vs maintenance expenses
- expense rates (expressed as cost-income) :
 - settlement/acquisition : 80-110%; maintenance : 40-60%
- refinement to consider relative customer costs of acquiring e.g. “battler” vs “professional

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Control Cycle Framework



Actuarial opportunity to:

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Presentation to IAAust Financial Services Forum

by James Hickey