

Predicting Mortgage Churn

Karl Williams

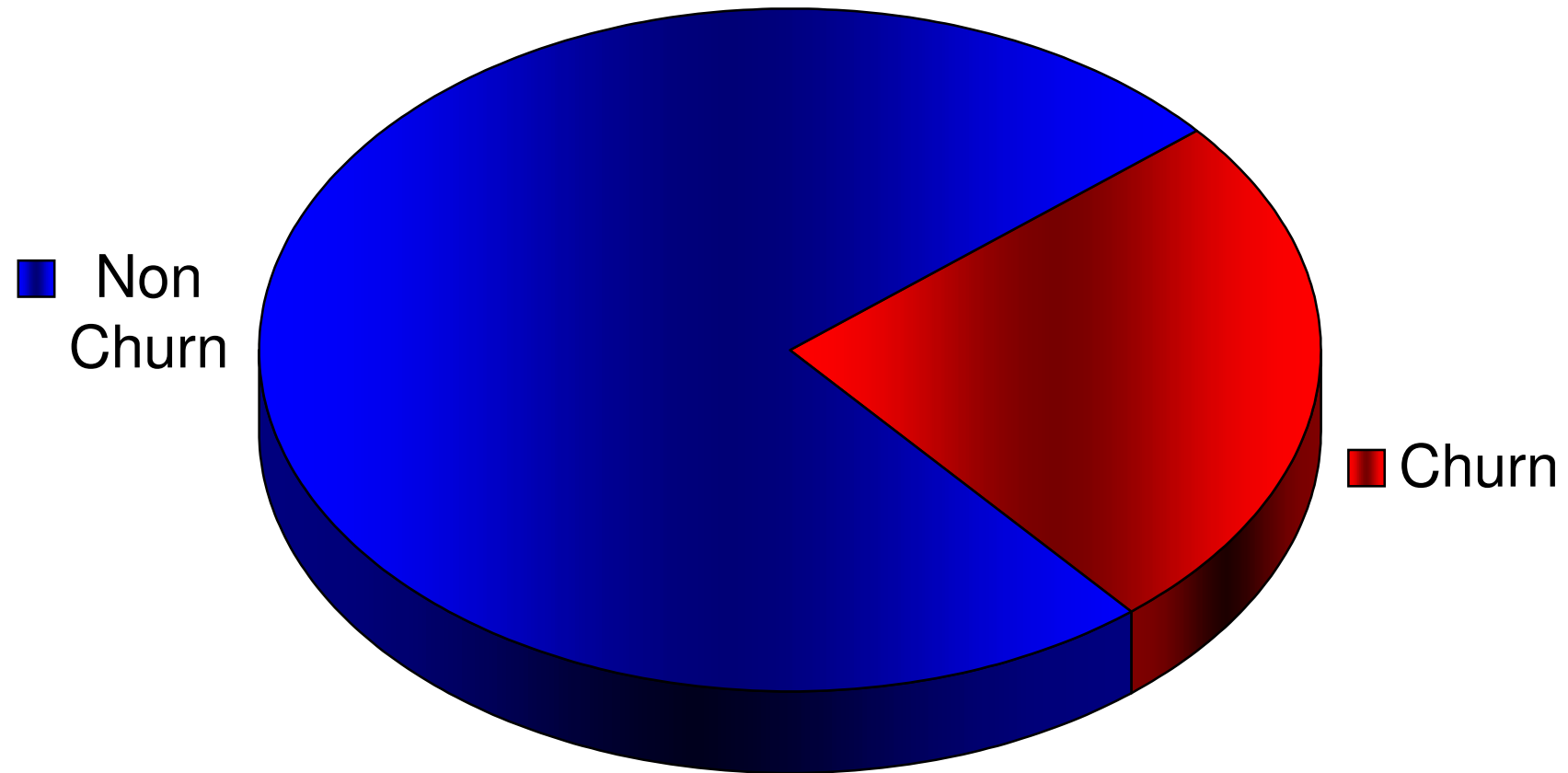
- Introduction
- Why Predict Churn?
- Organisations
- Data & Sampling
- Churn Definitions
- Databases / Predictive Content
- Results
- Additional Considerations
- Conclusion

Why spend time and money
attracting new customers
only to let them walk out
of the door?

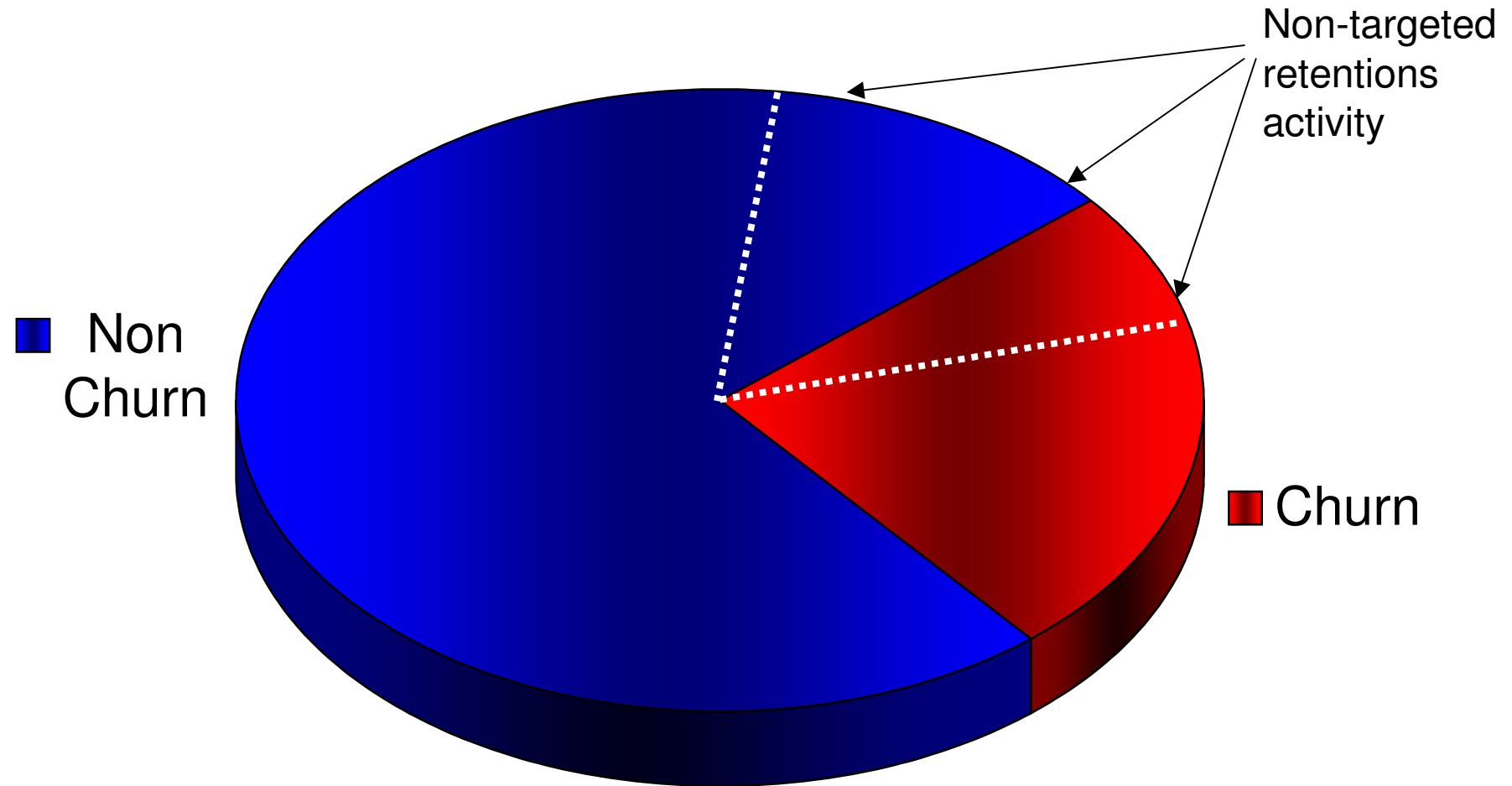
- Competitive UK mortgage market
- Credit aware individuals
- Competitive advantage in the ability to identify high and low risk churn segments
- Targeted retentions strategies utilising churn and risk measures

- Can we predict likelihood of churn?
- Behavioural scorecards
 - Predict churn within fixed outcome

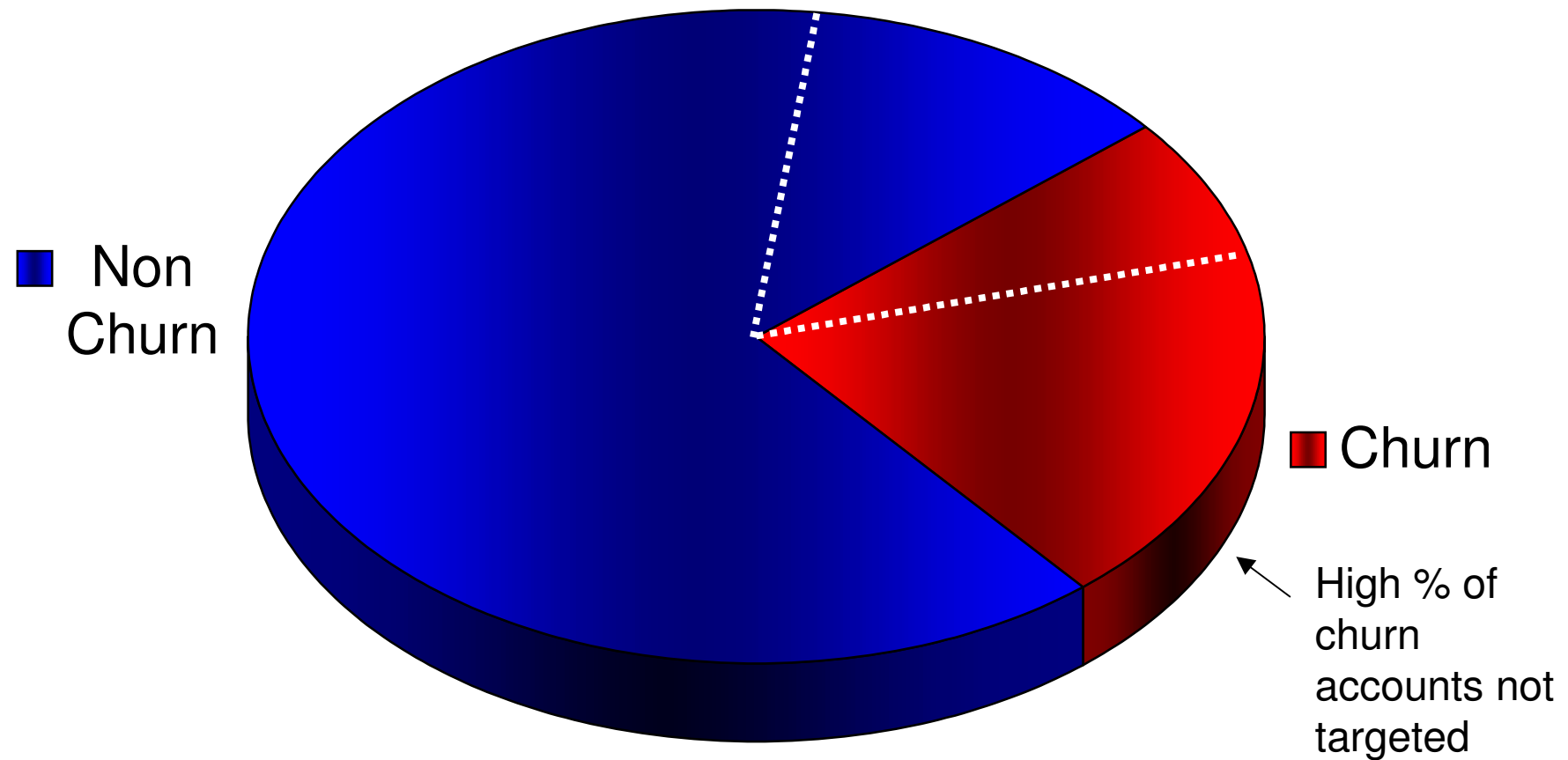
No Retentions Activities



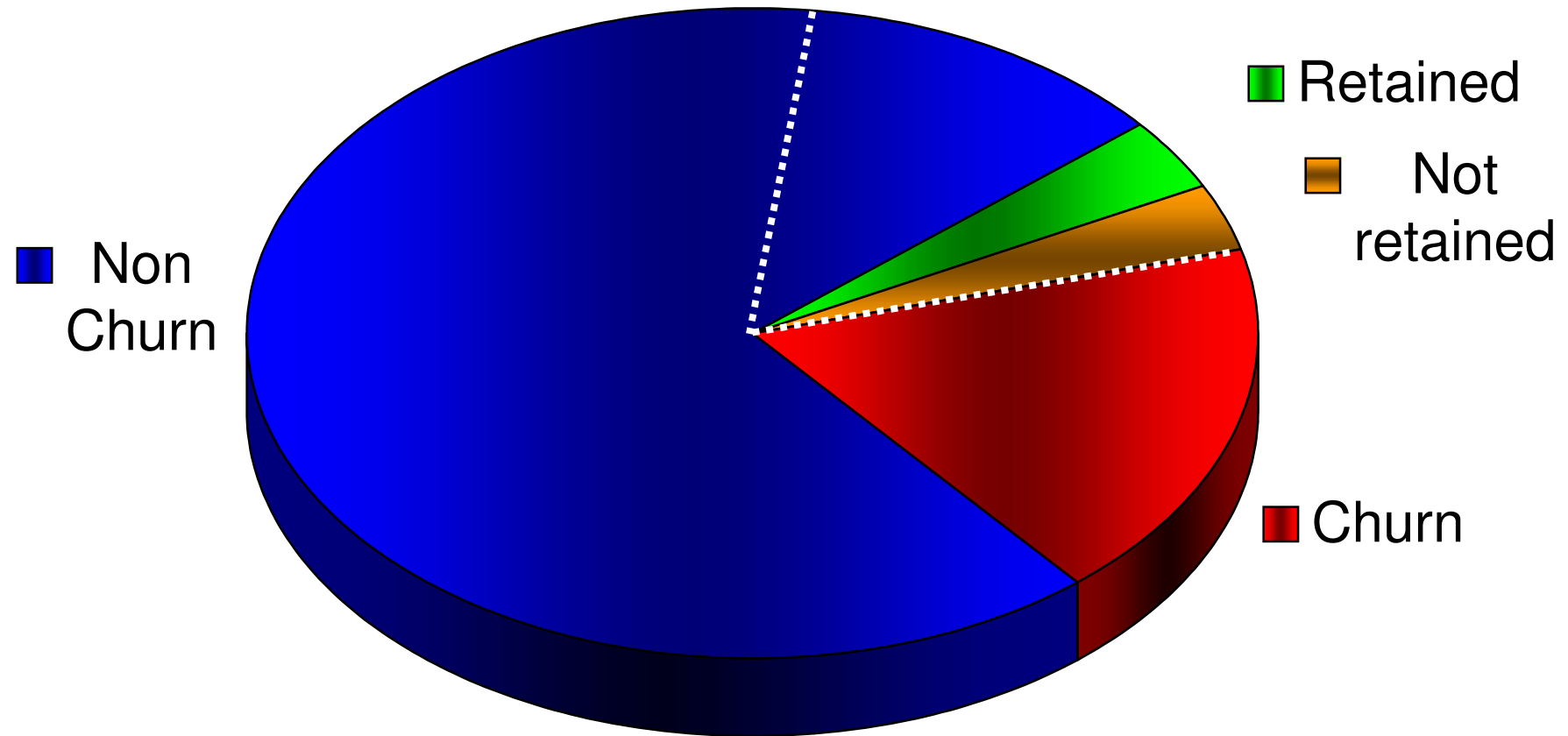
Non-targeted Retentions Activities



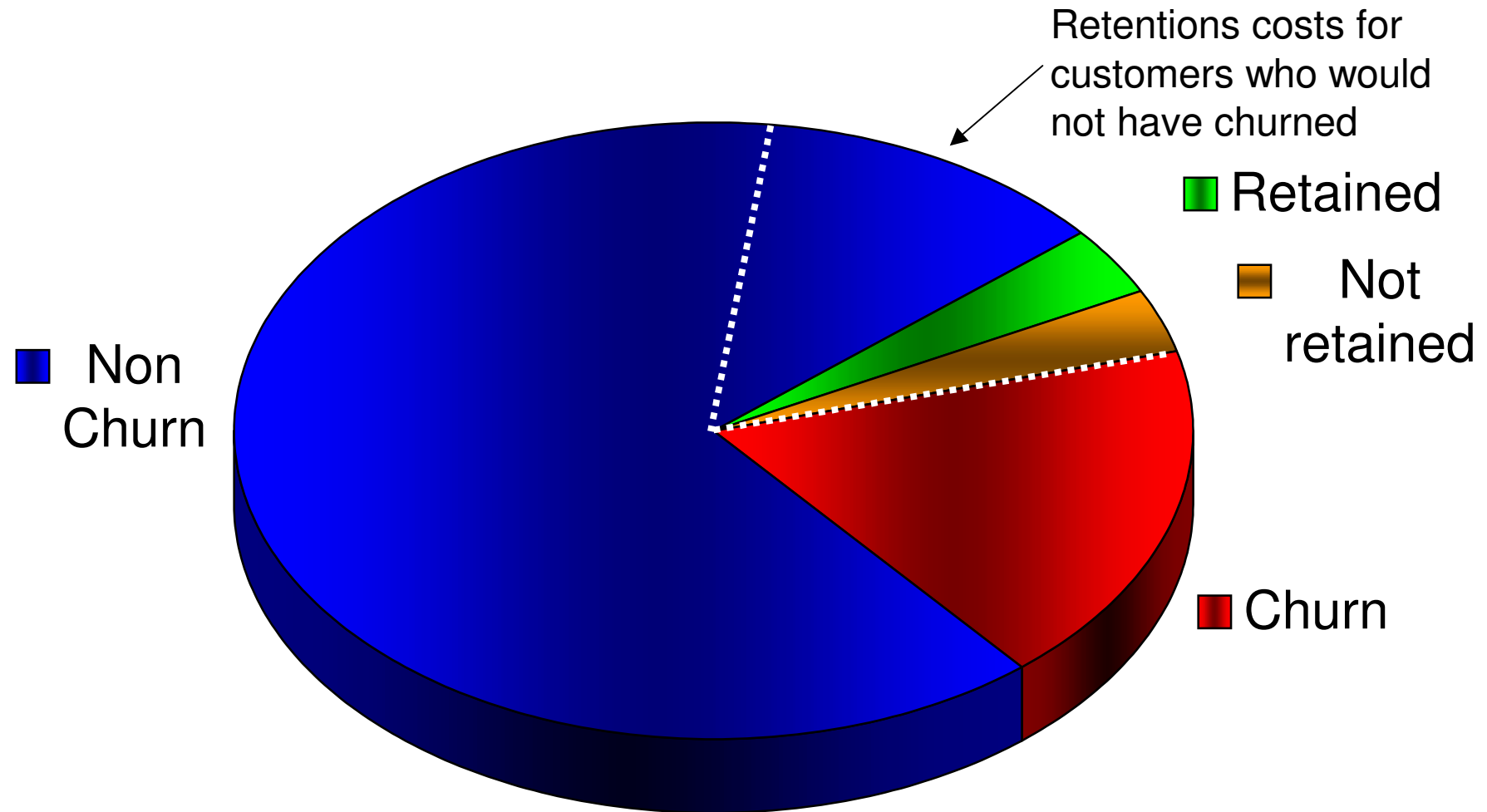
Non-targeted Retentions Activities



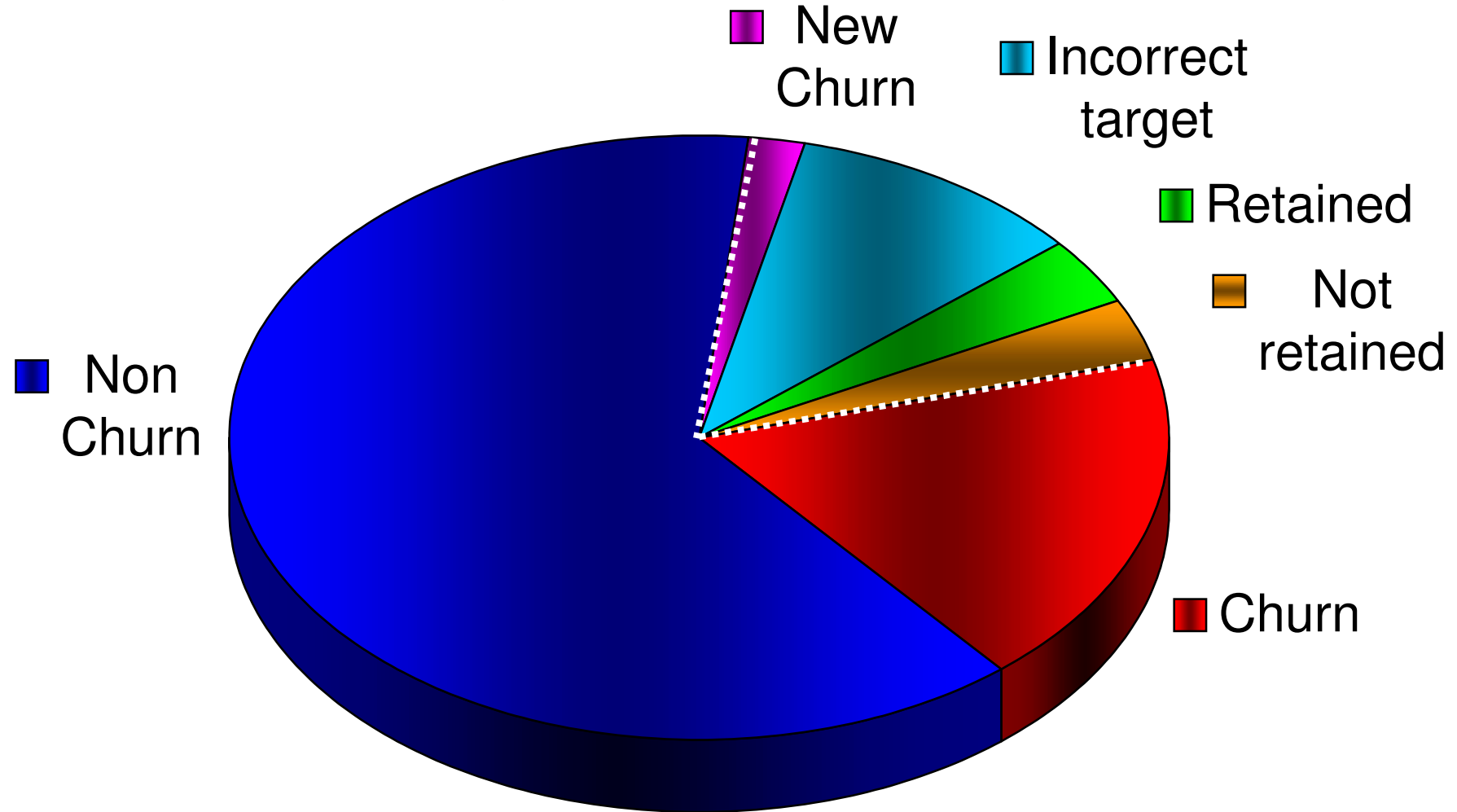
Non-targeted Retentions Activities



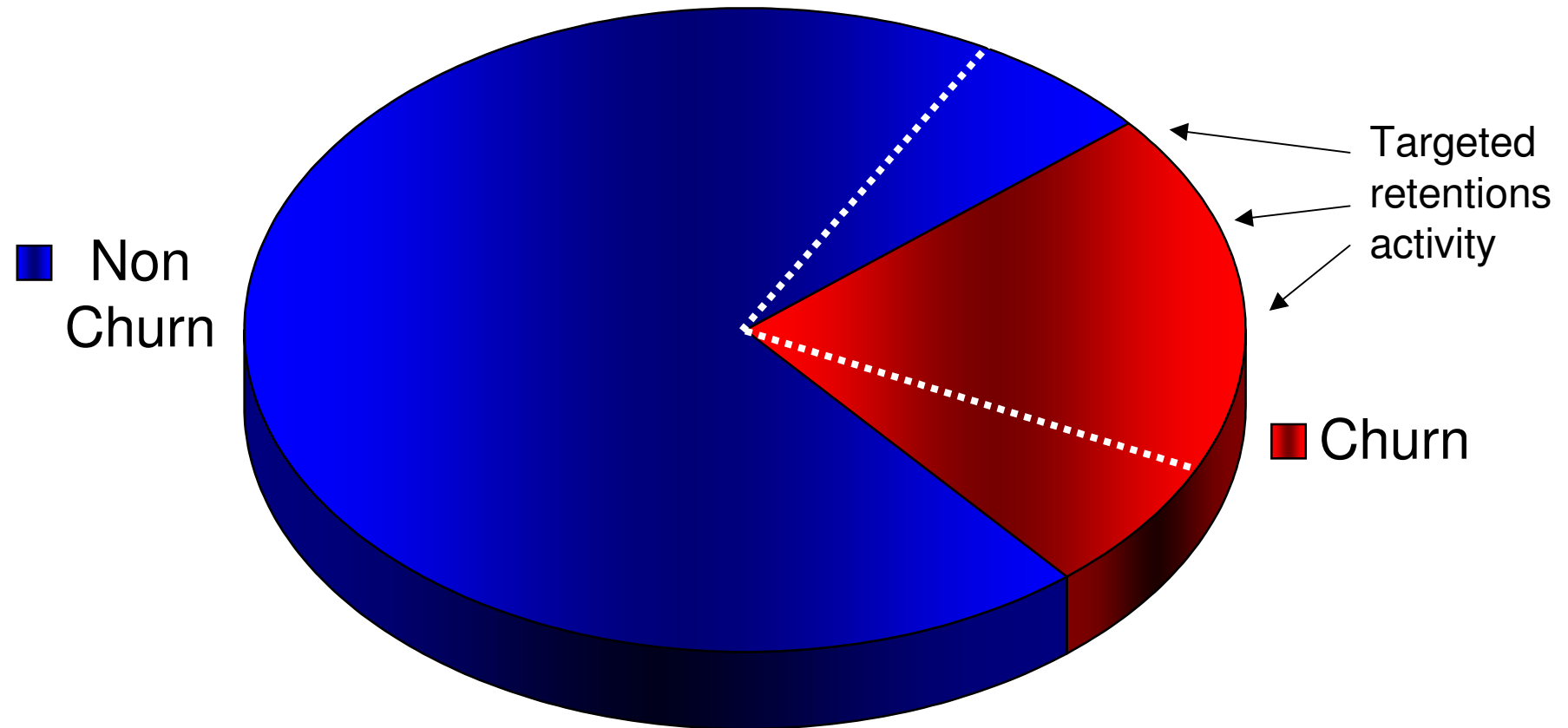
Non-targeted Retentions Activities



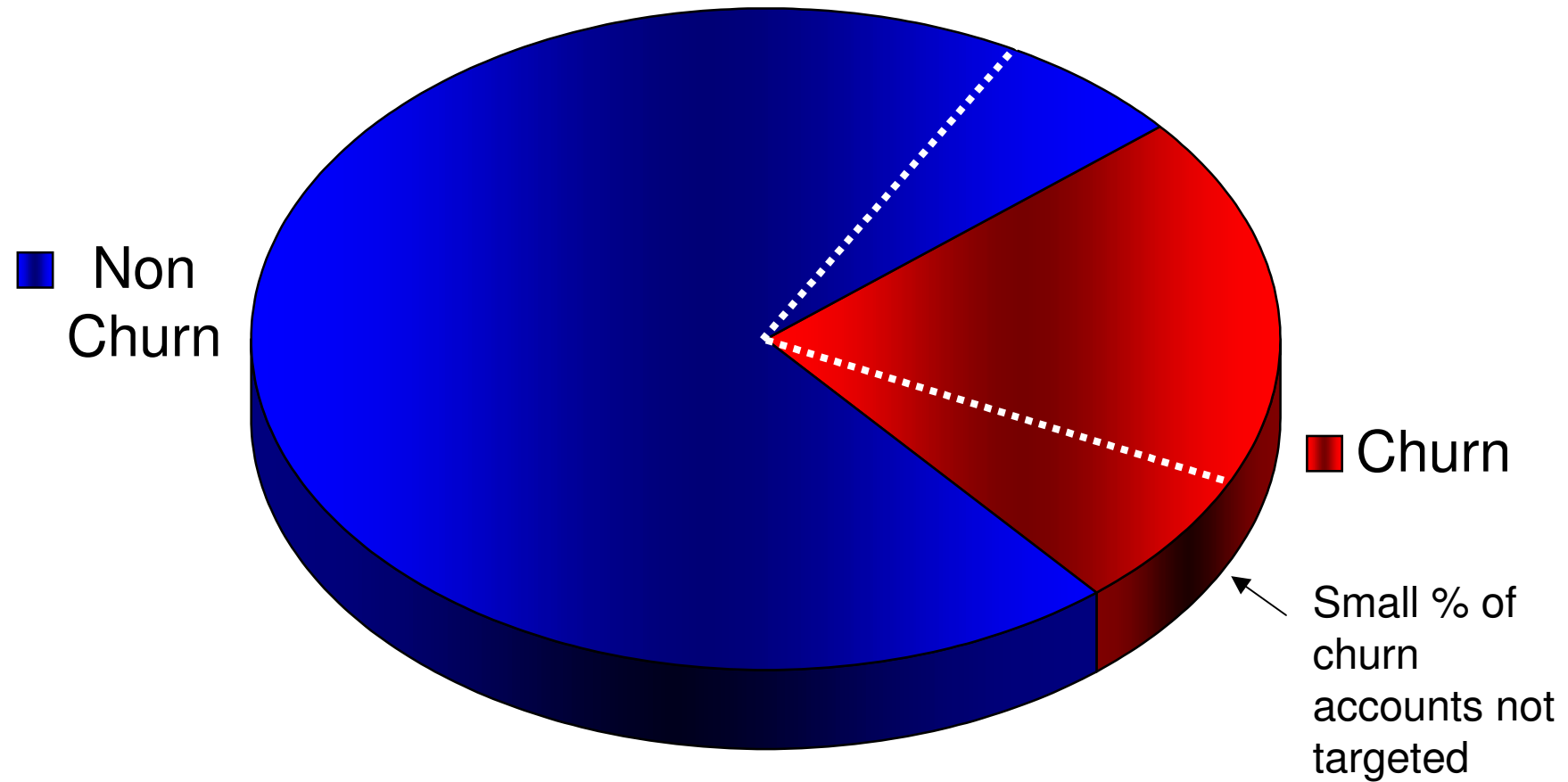
Non-targeted Retentions Activities



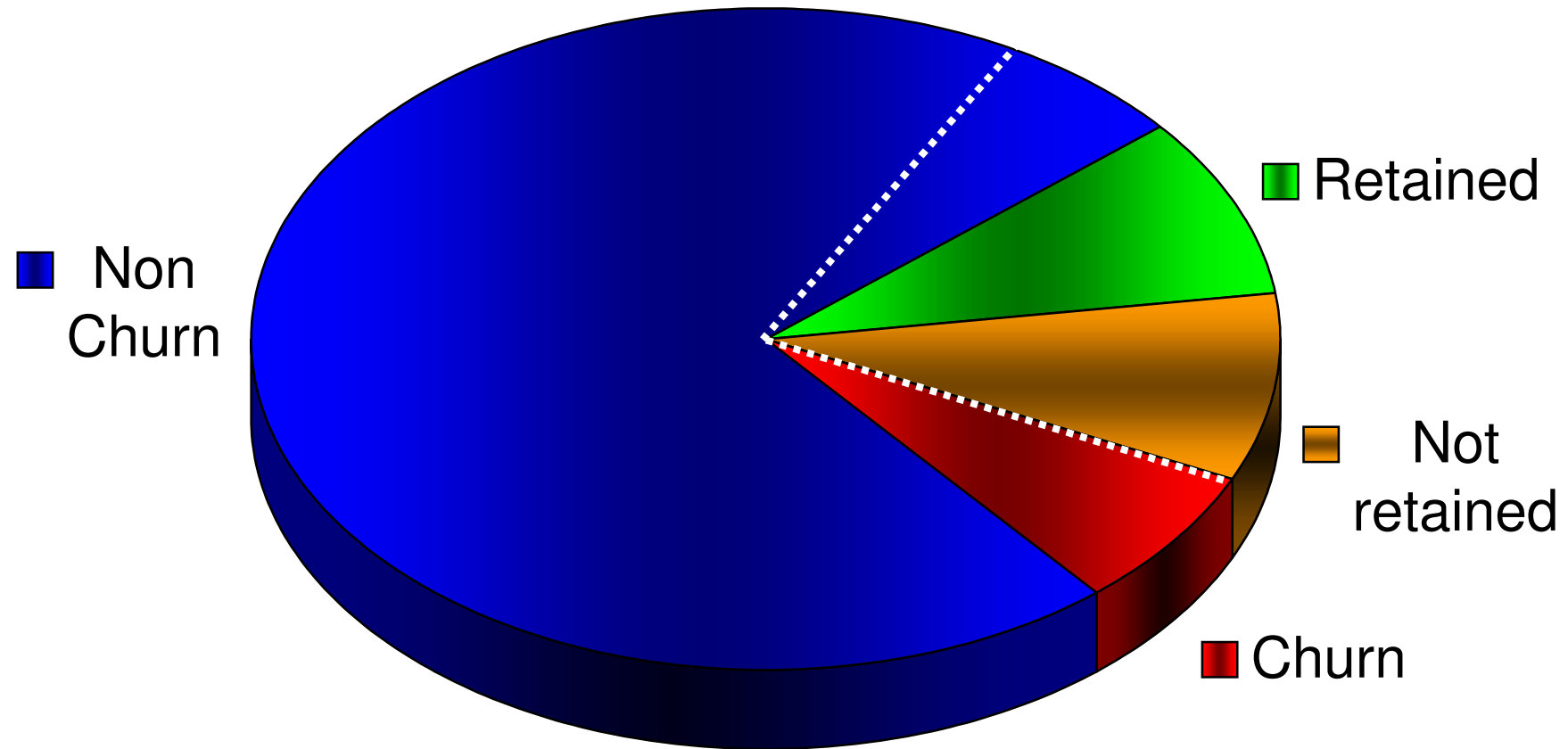
Targeted Retentions Activities



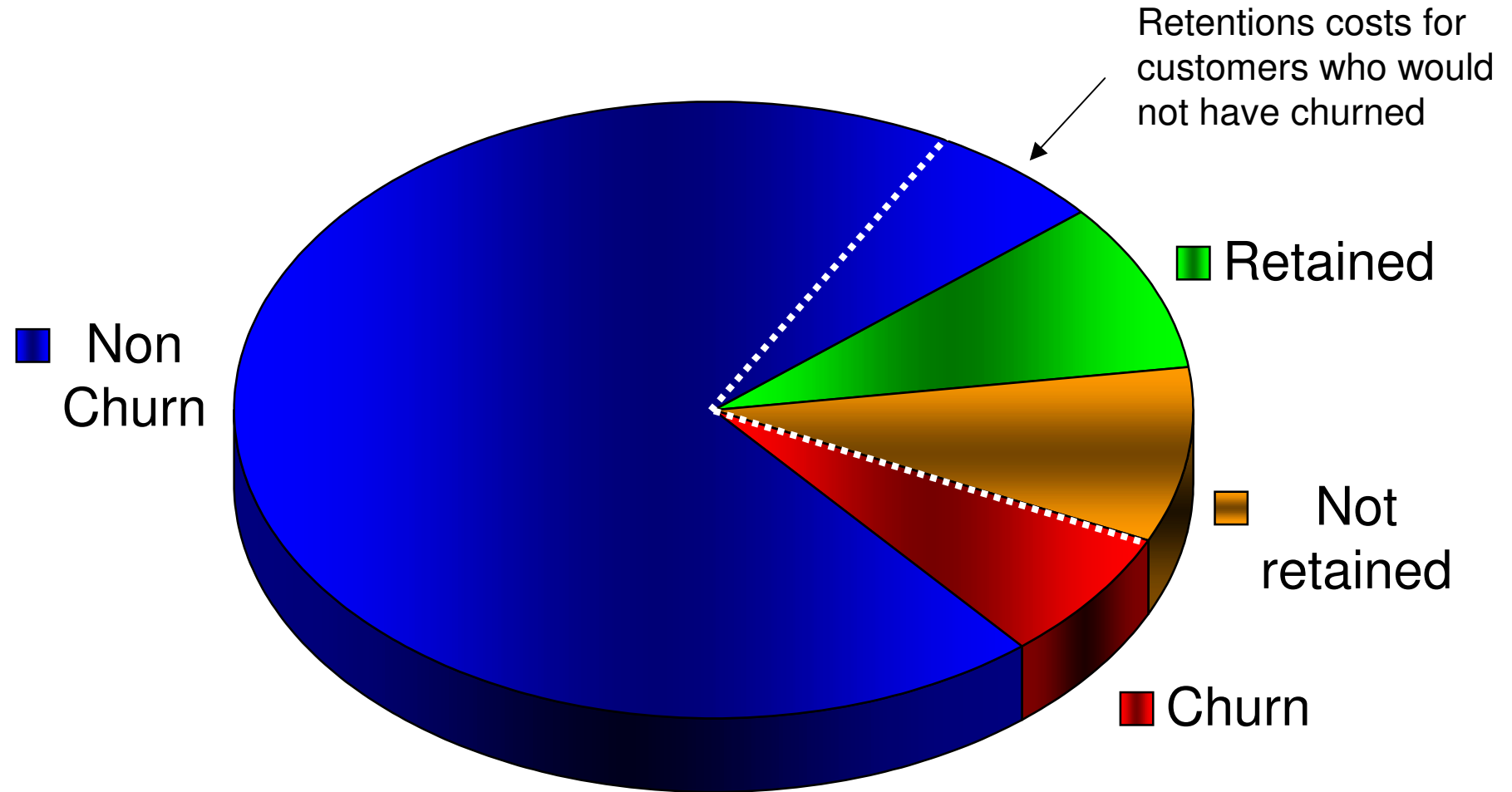
Targeted Retentions Activities



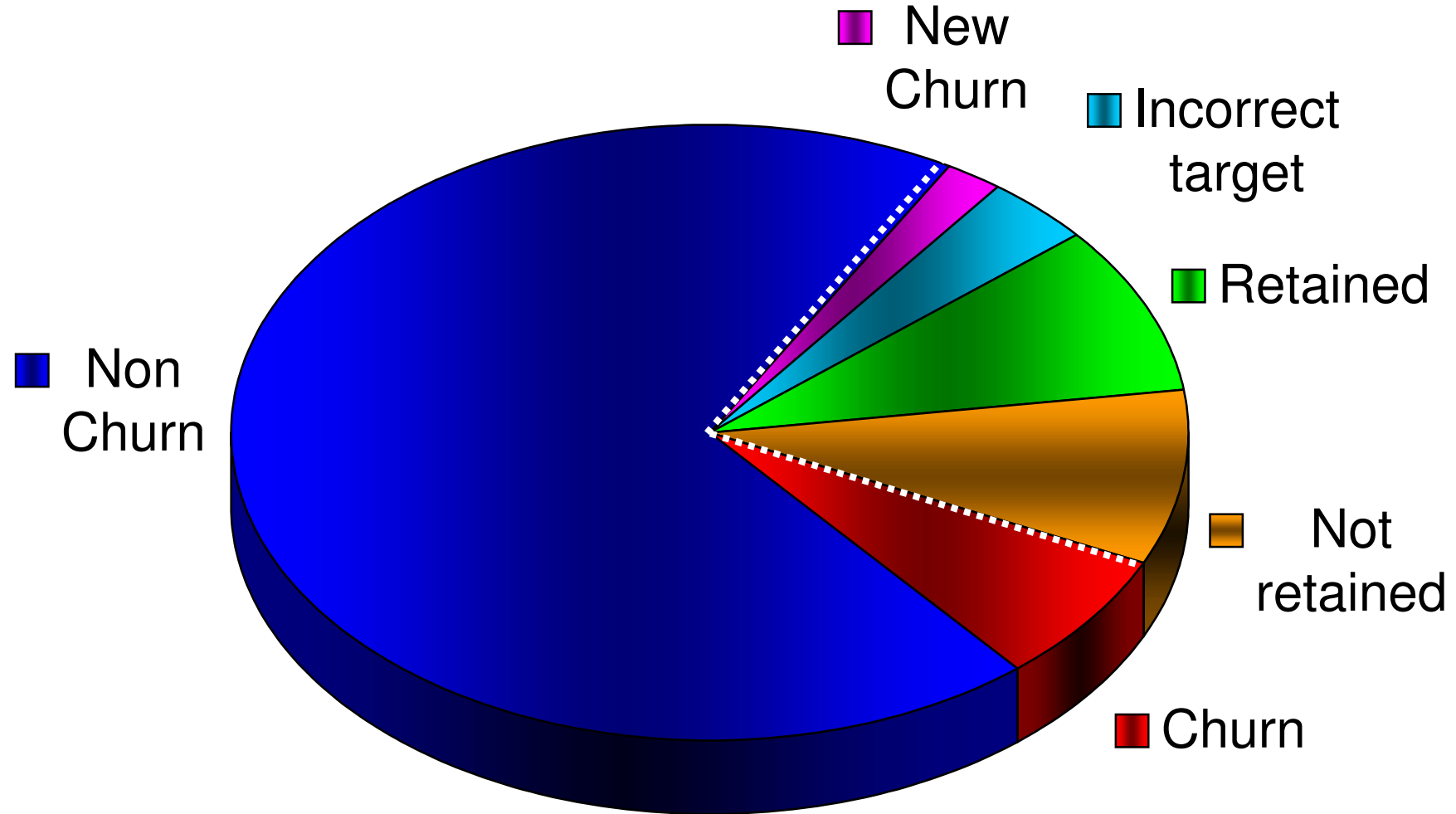
Targeted Retentions Activities



Targeted Retentions Activities

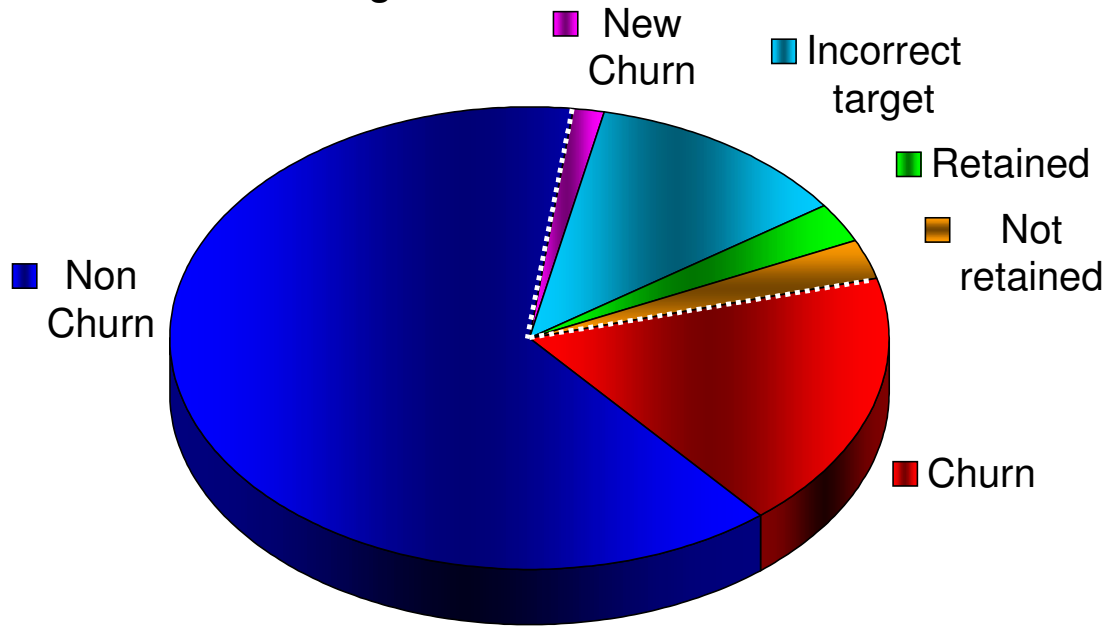


Targeted Retentions Activities



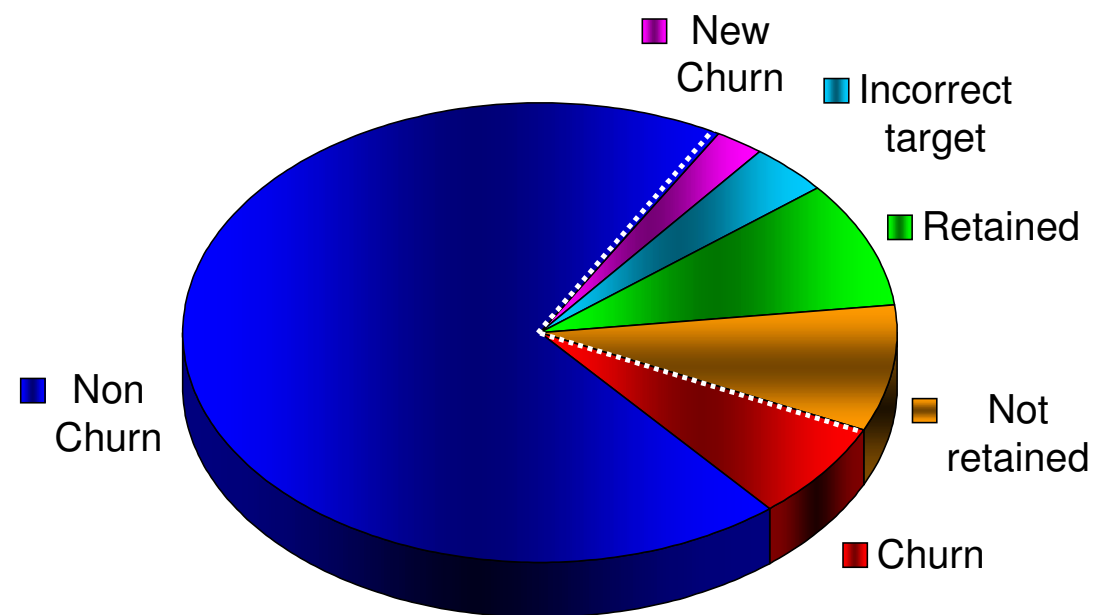
Why predict likelihood of churn?

Non-targeted Retentions Activities



Non-targeted
Impact of actions unknown
Costs may outweigh benefit

Targeted Retentions Activities

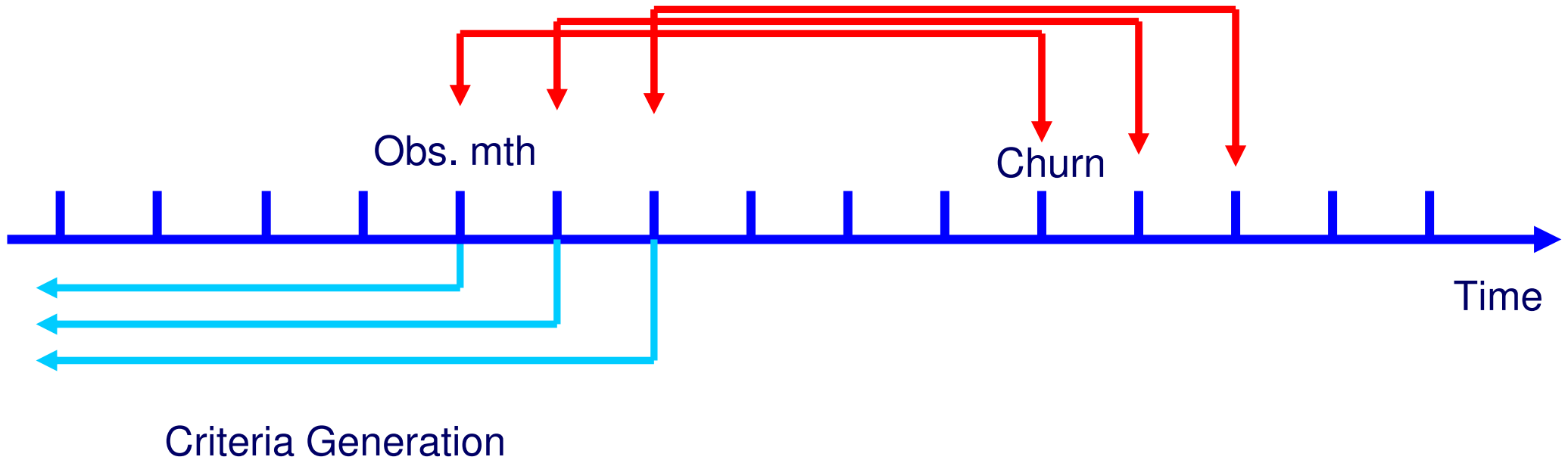


Targeted
Maximise impact of
retentions activities
Highest return on investment

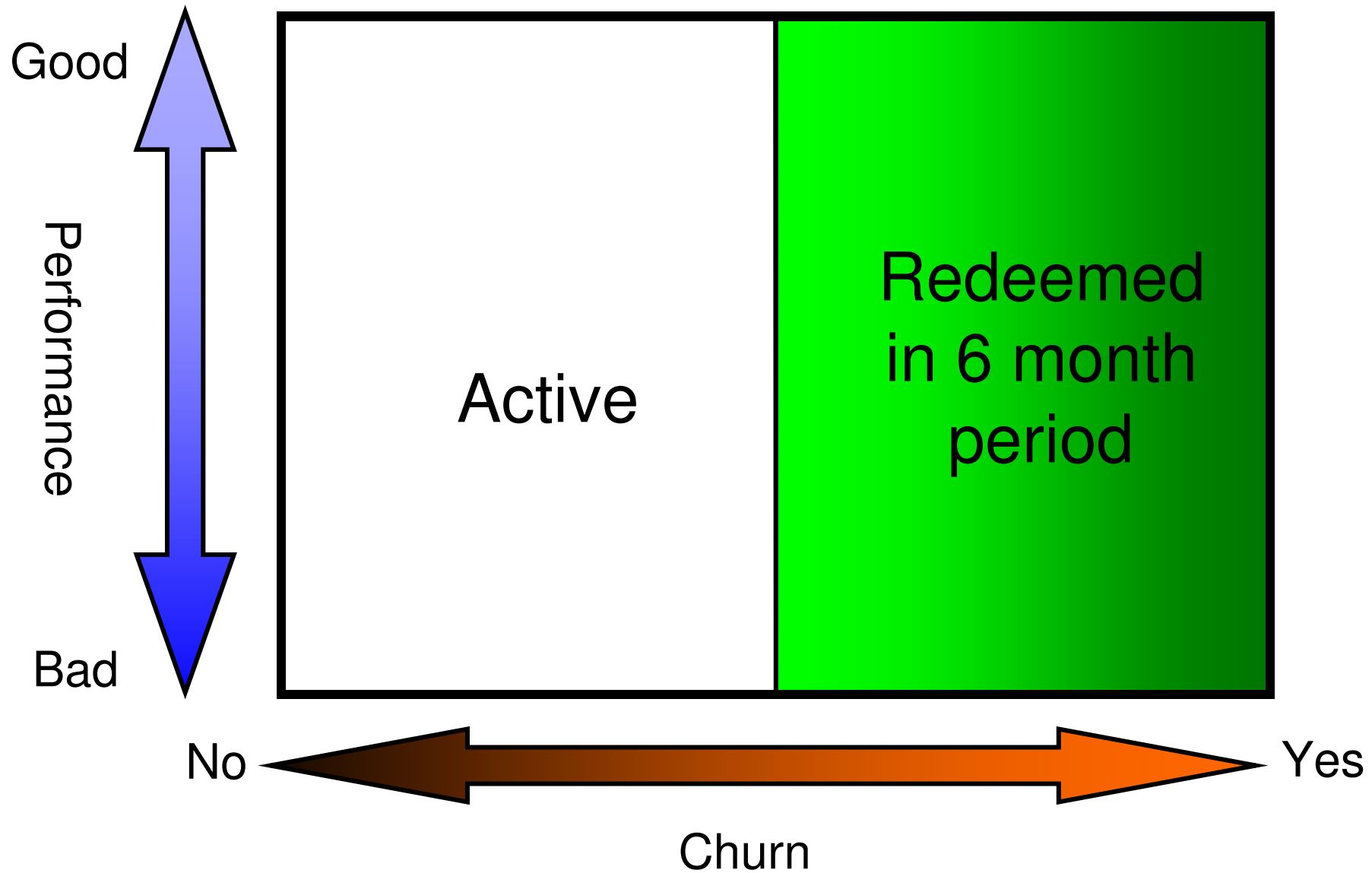
- Three mortgage portfolios
 - Prime
 - Sub-prime
 - Self-certification
- Committed to credit scoring for risk
- Limited retentions activities

- Sampled from portfolios of 100,000 to 450,000 records
- Random sample approx 4000 (per sample)
 - Exclude inactive accounts
 - Exclude 3+ arrears at observation
- Data
 - Application information
 - Account management information
 - Experian 'Delphi for Customer Management' data

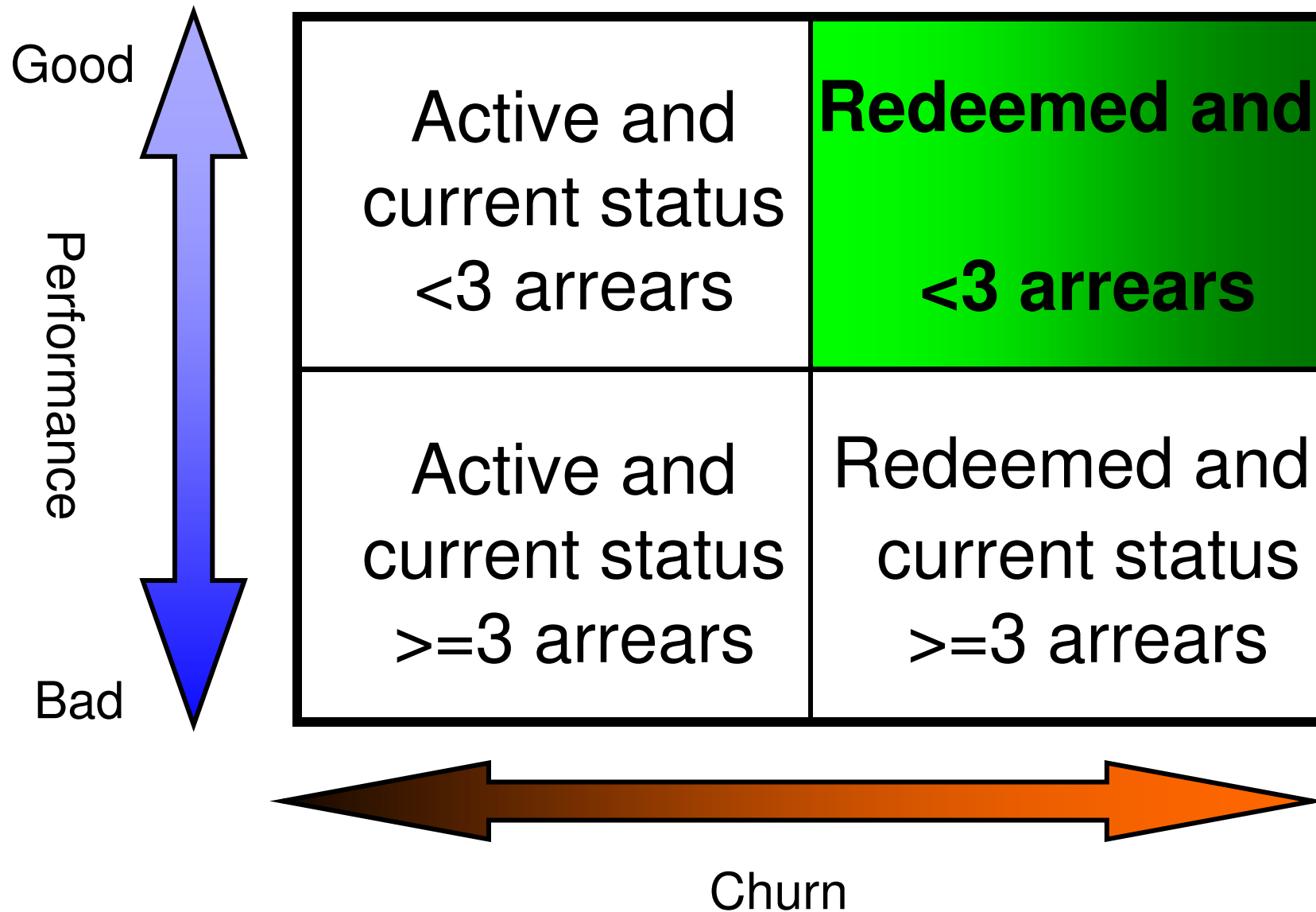
- 6 month outcome

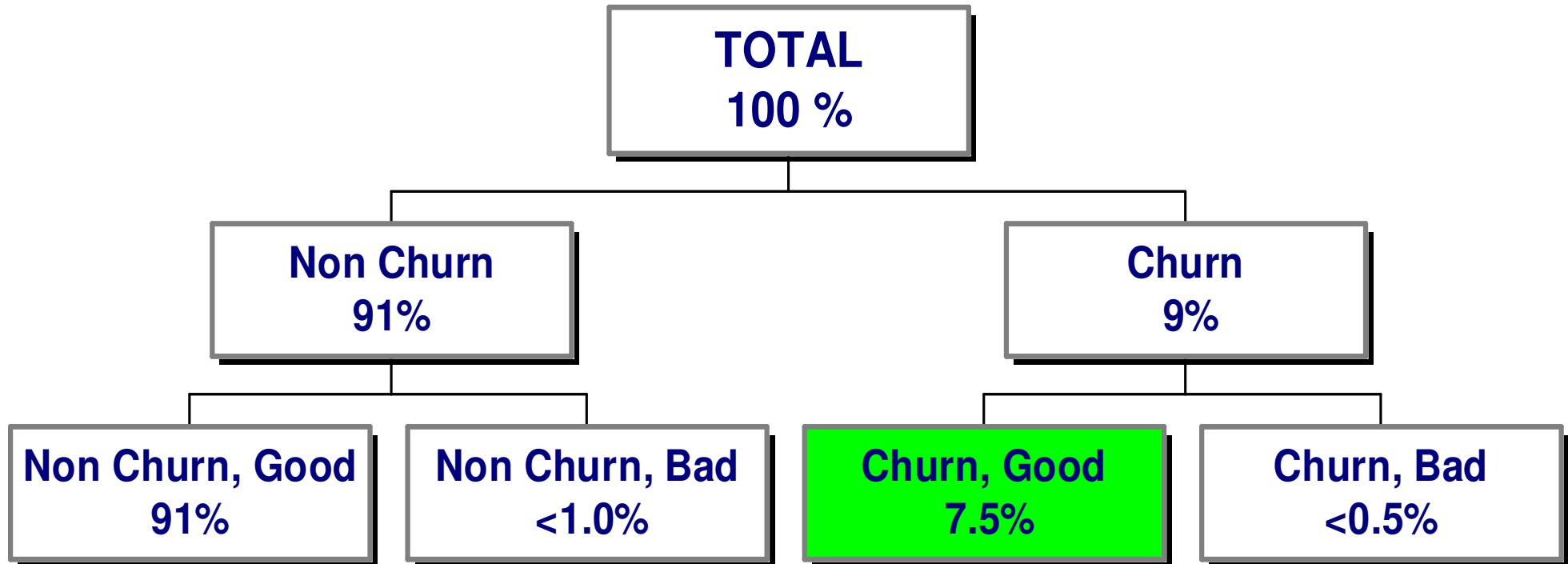


Churn definition



Churn definition



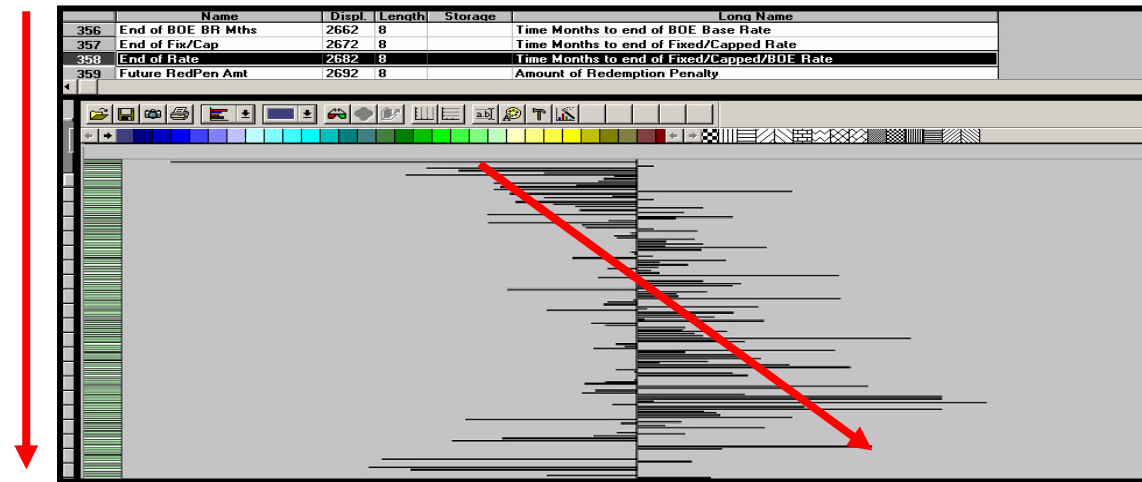


The 6 month churn rate is high for a specialist market and a prime lender with a competitive range of products

- Database included 370+ criteria
 - Application details – little use on established accounts
 - Bureau data – several predictive elements
 - Account Management information – very predictive

Age of mortgage account	Pay amount as % of monthly income
Age of applicant	Redemption penalty
Current arrears % current balance	Penalty plan
Current arrears amount	Period from cessation
Current balance % advance	Loan type
Current product interest rate	Monthly repayment
End of fixed/capped/discount/tracker rate	Worst status in x months
Months since payment arrangement	Worst current status
Months since redemption statement	Age of account
Number of months since name change	Number of accounts
Number of payment changes last 12 months	Total number of accounts active / settled
Months since status x	Number of accounts opened last x months

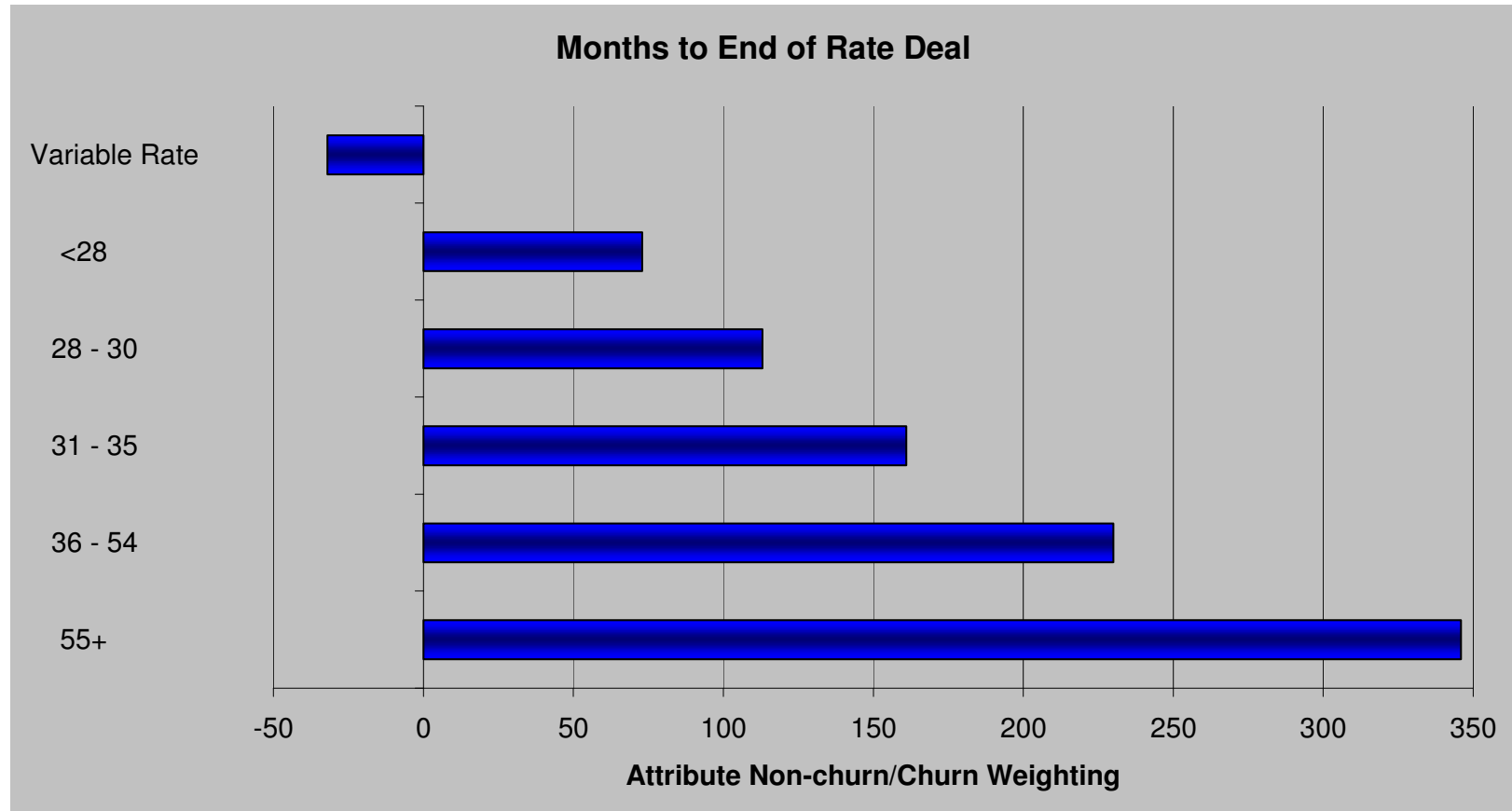
Increasing
time to end
of
introductory
offer



Increasing likelihood of retention

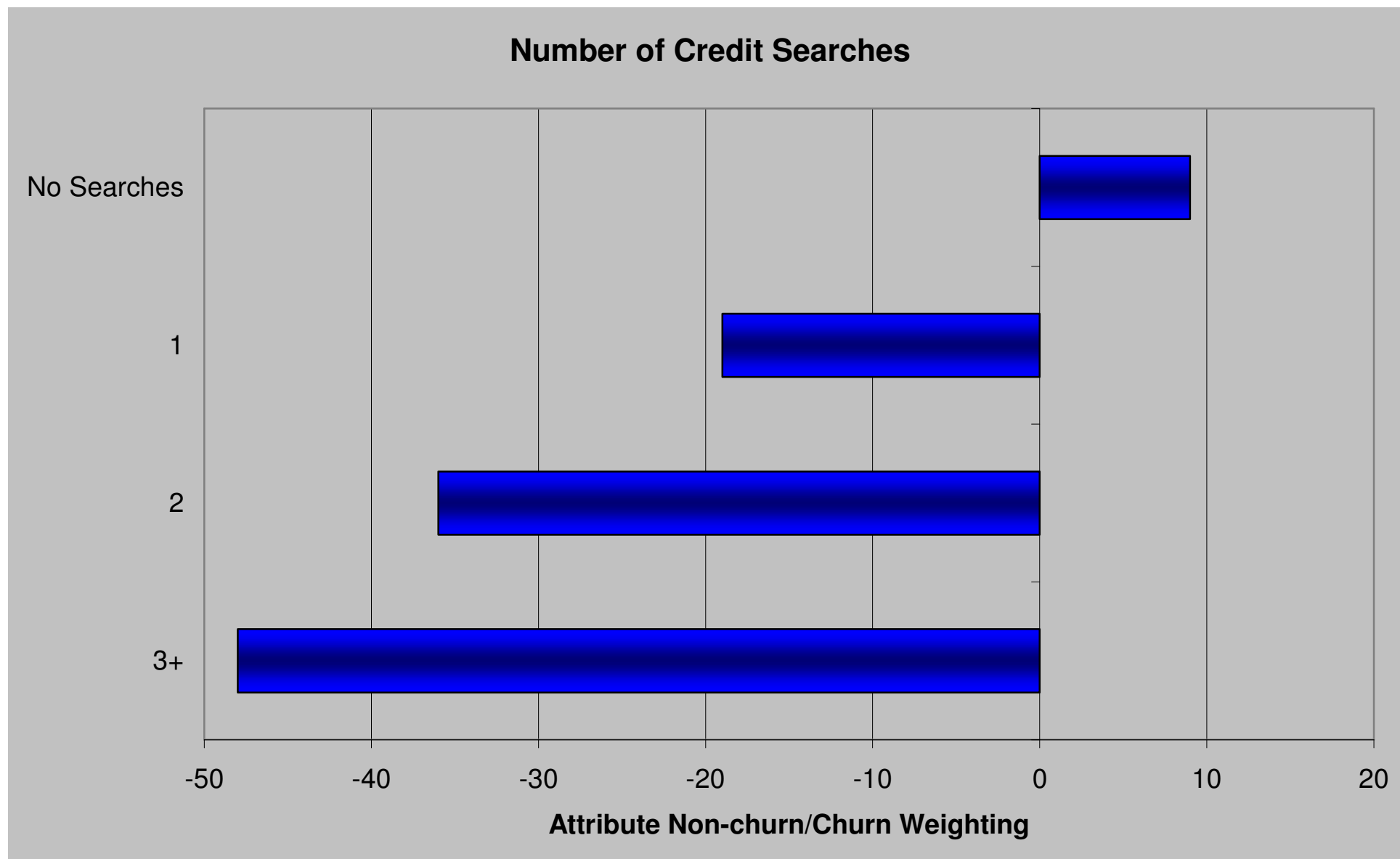
- Each criterion has a spread of attributes
- Proportion of churn:non-churn gives a predictive strength per attribute
- Individual criteria are grouped to maximise predictive strength

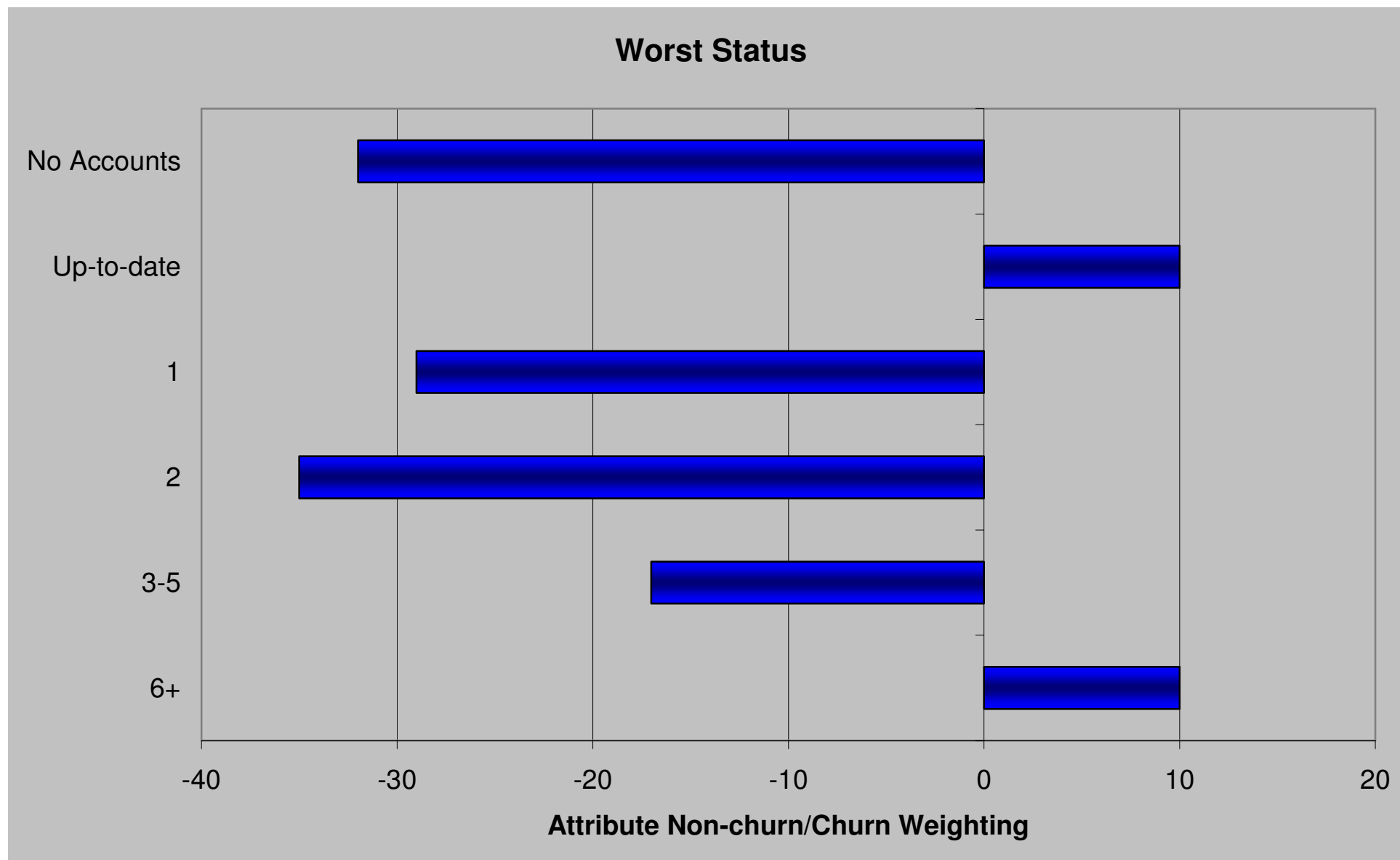
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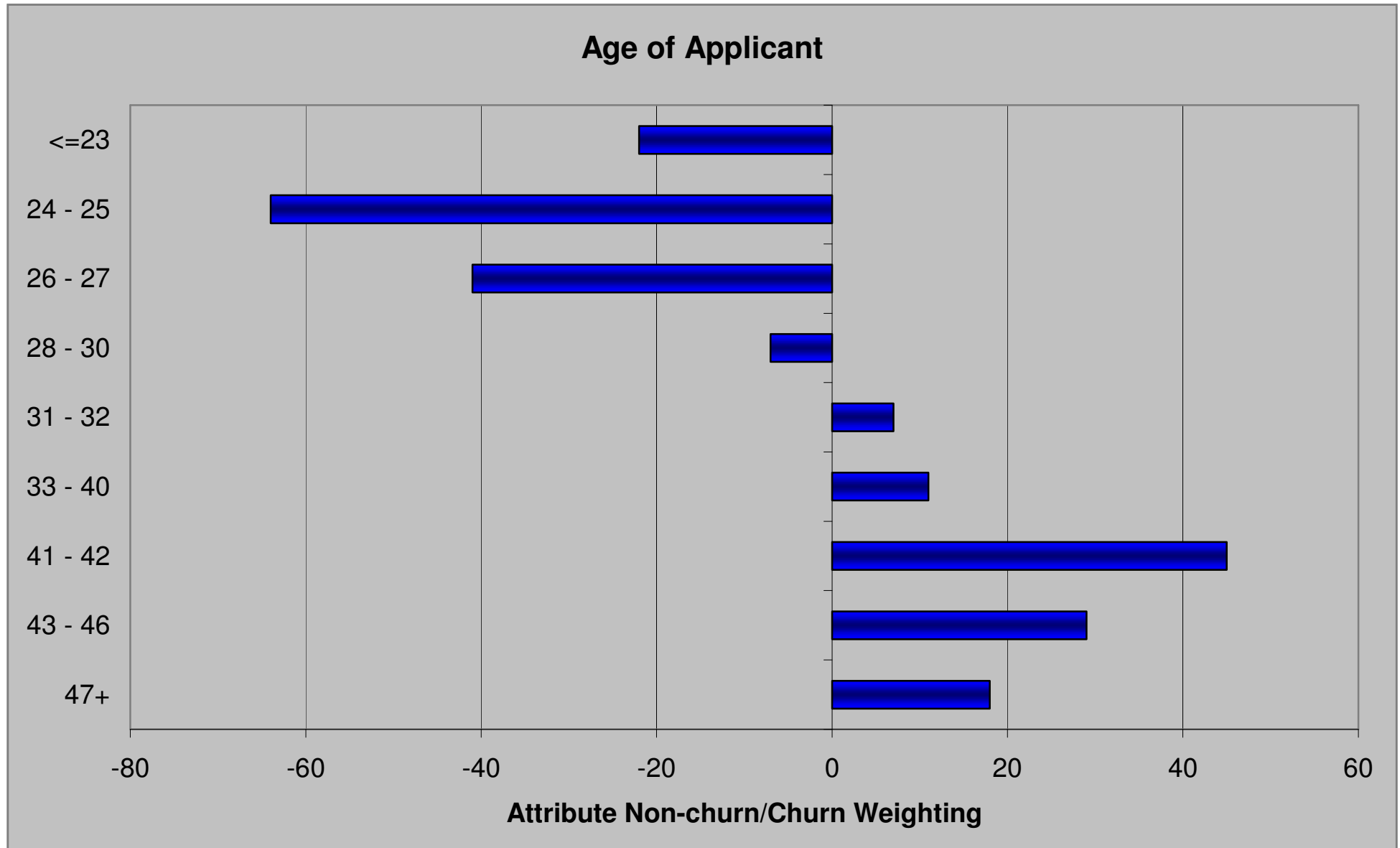


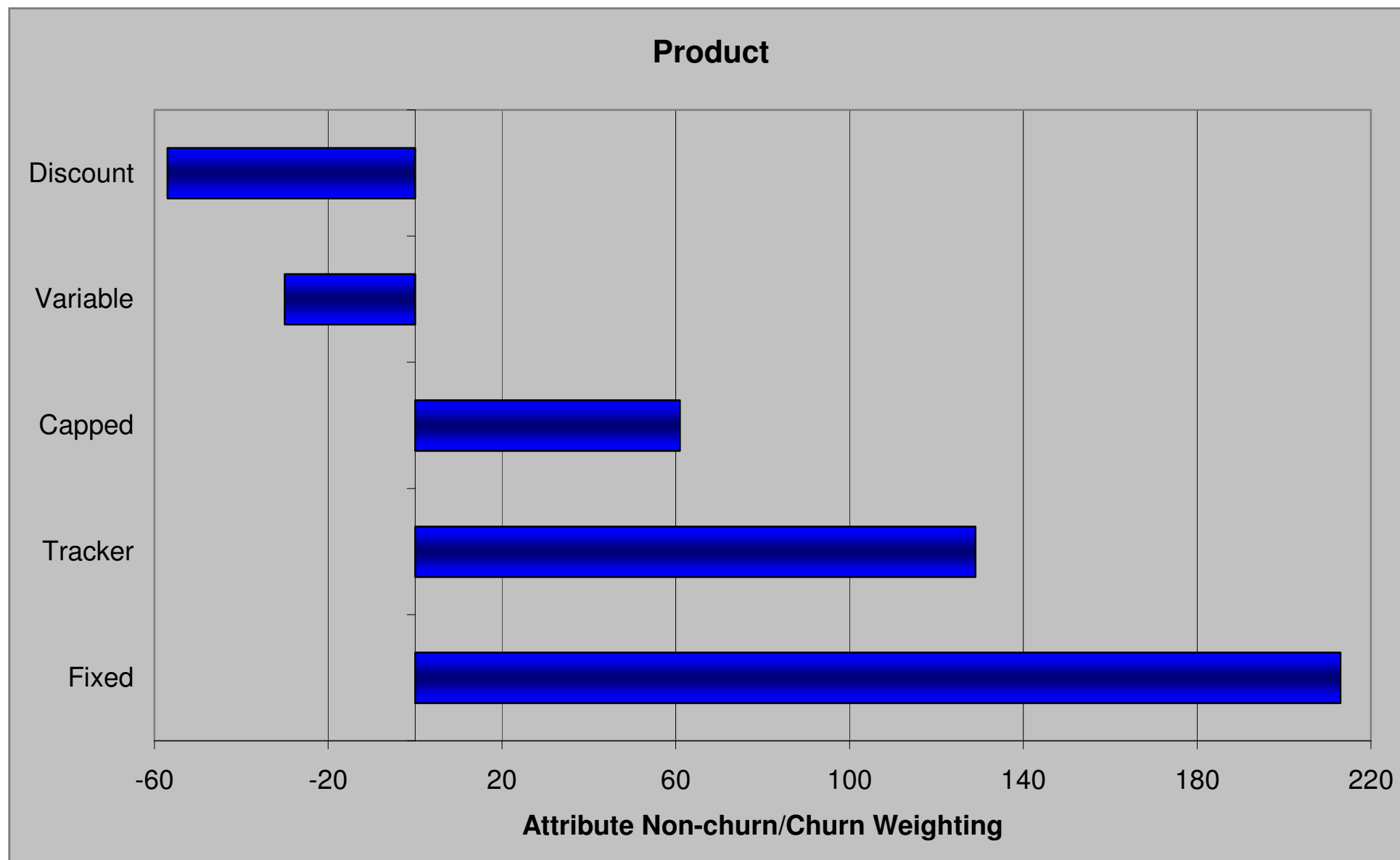
Increasing likelihood of retention

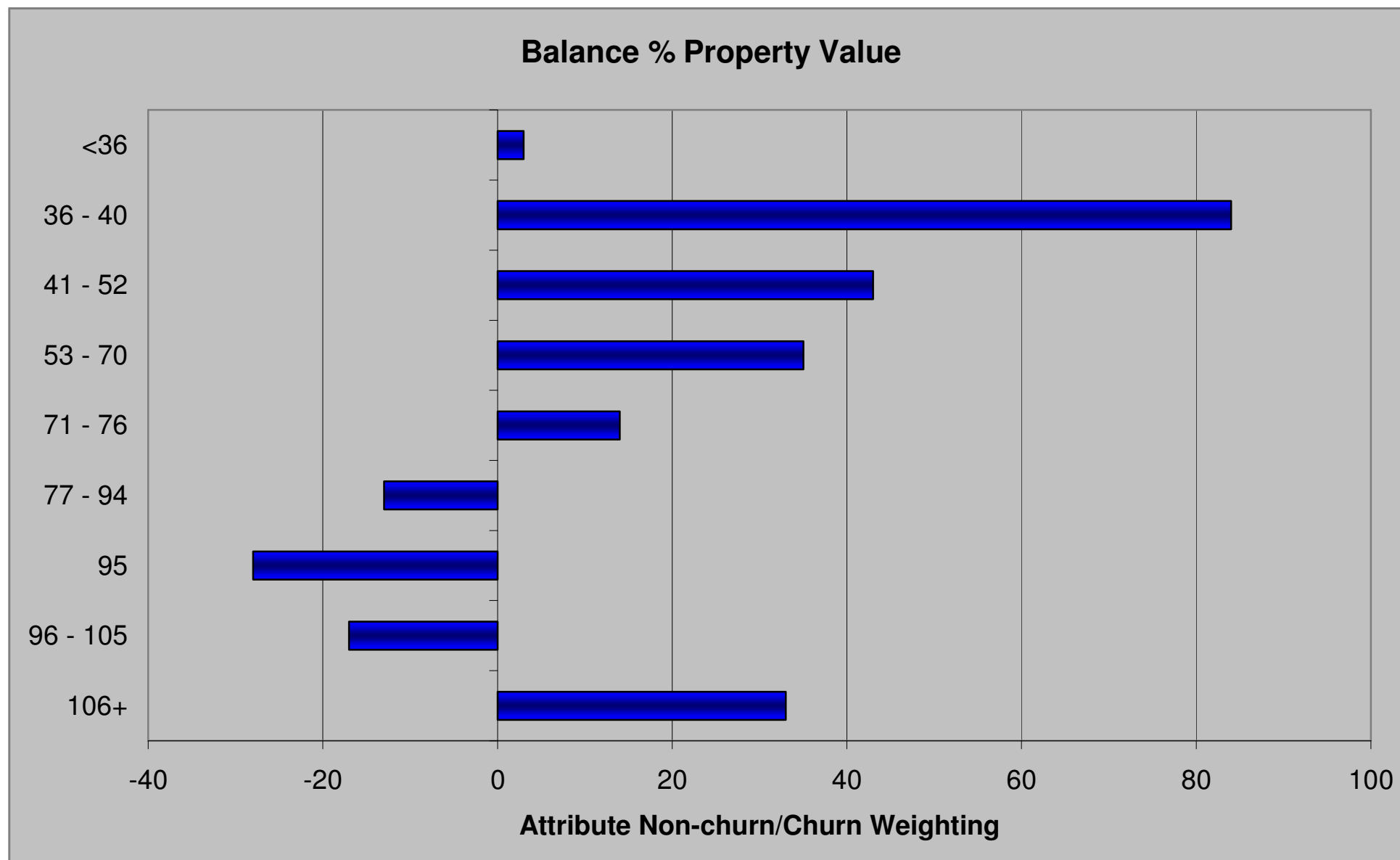


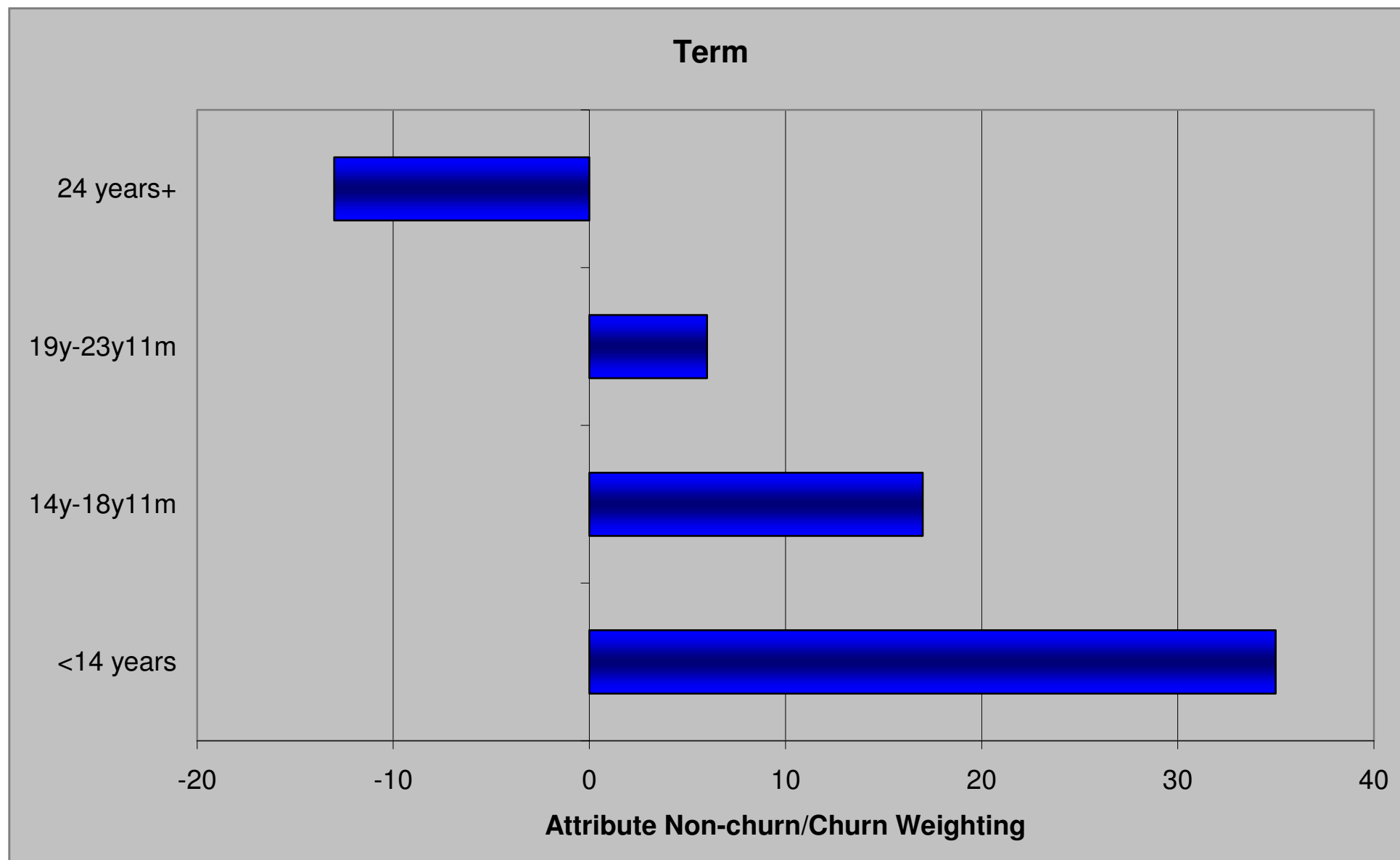


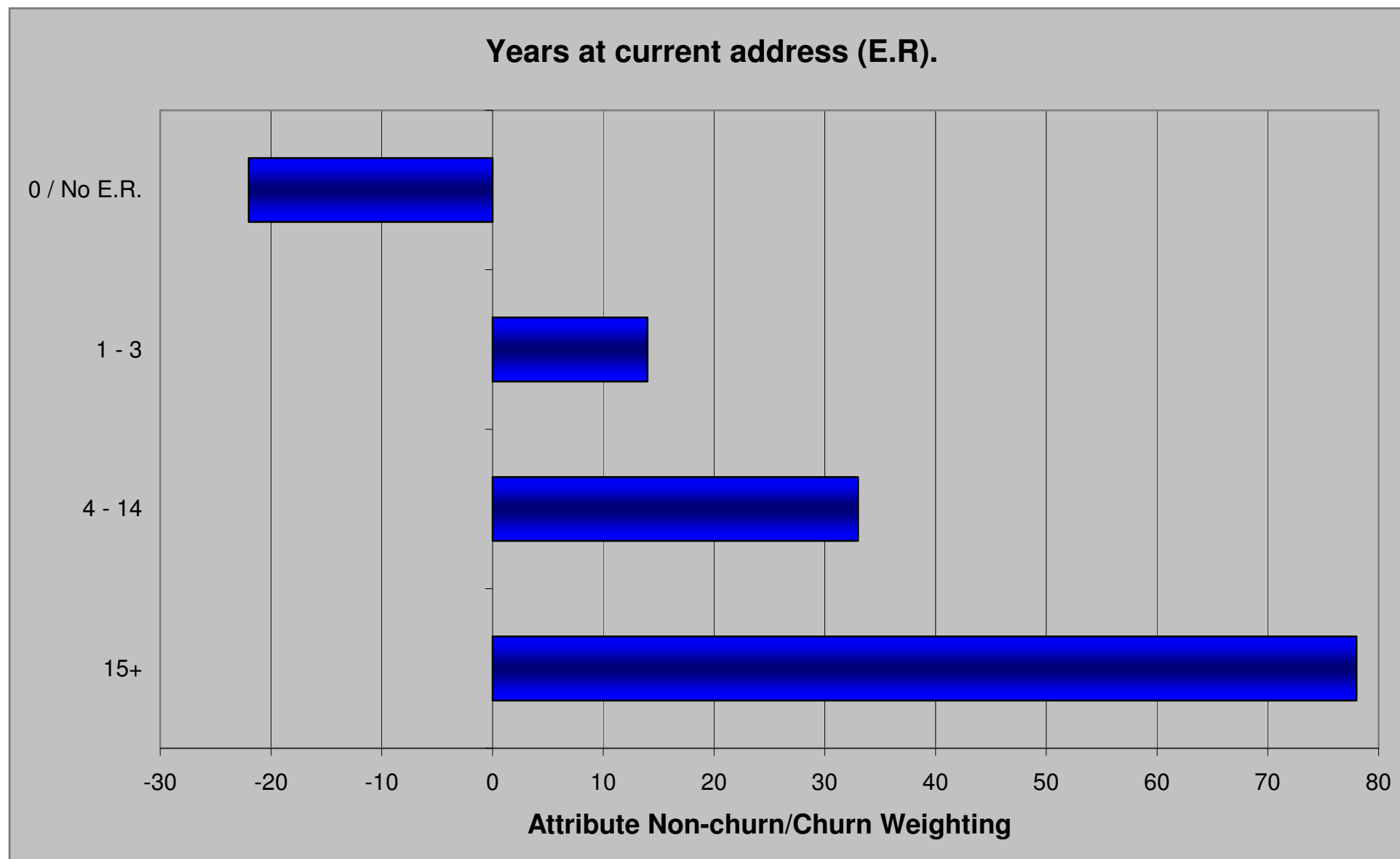




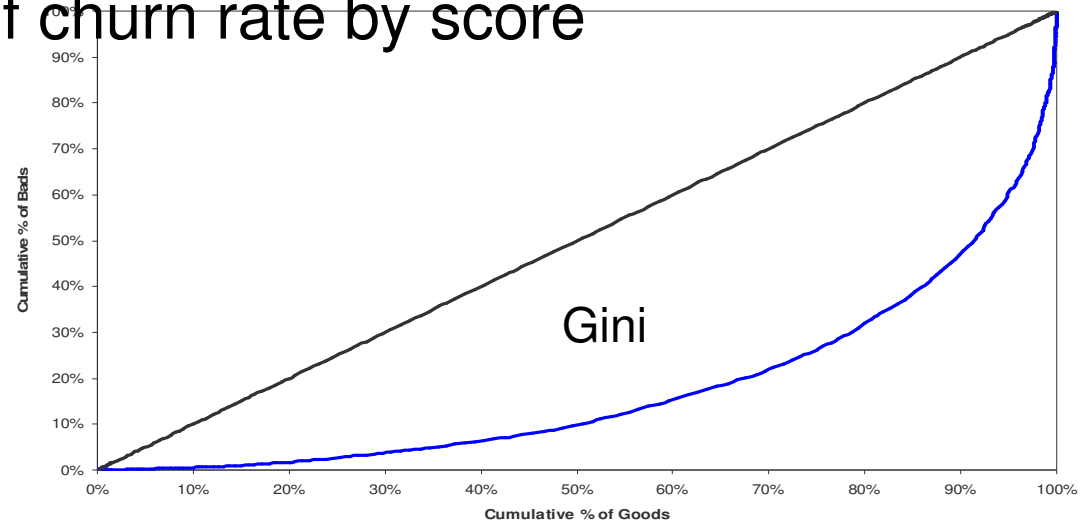








- Prove scorecards predictive on: -
 - Total population
 - Good accounts
 - All account types (fixed, tracker, variable, capped)
 - Scorecard Gini
 - Segmentation of churn rate by score



Results Summary



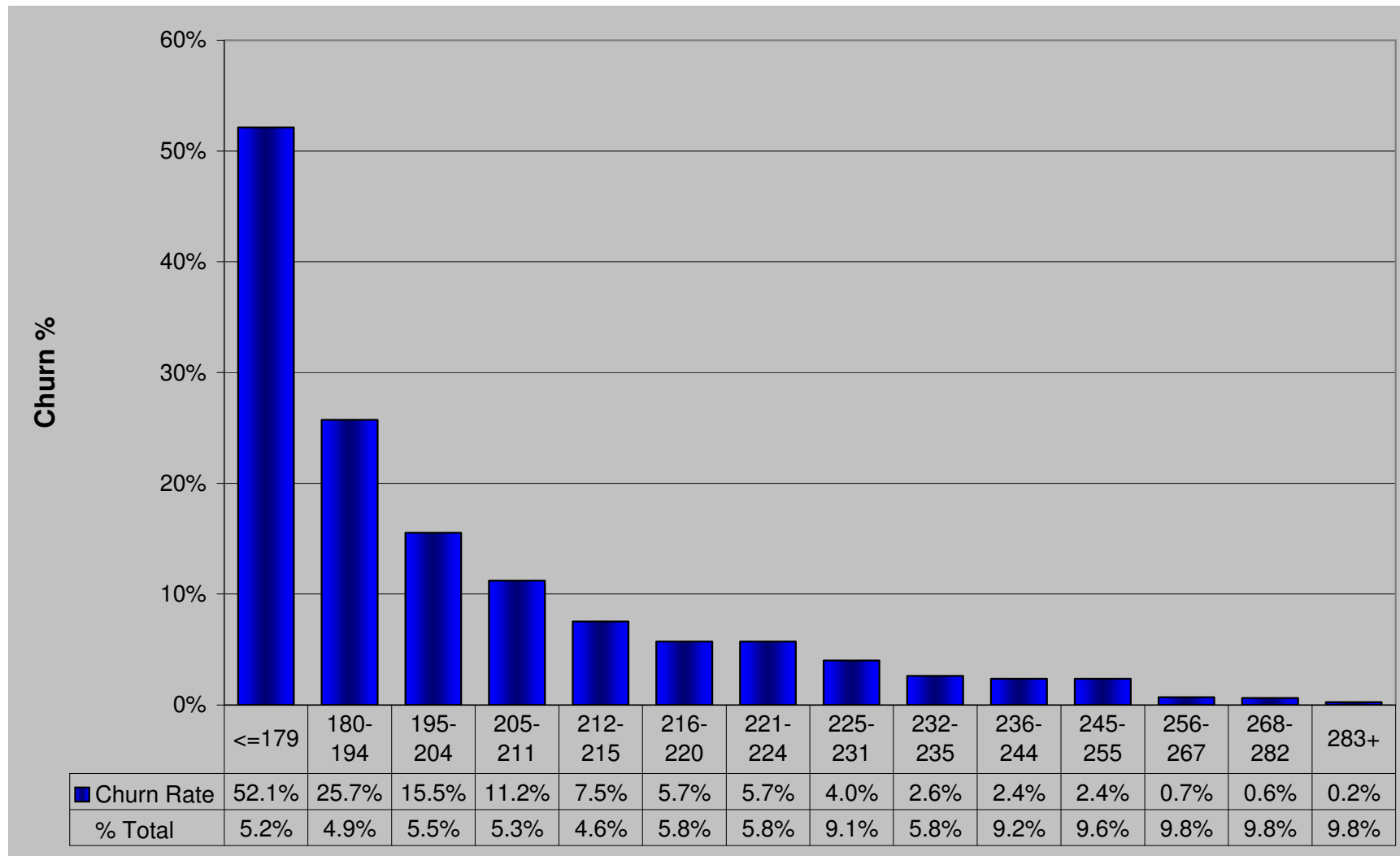
	Prime			Sub Prime			Self Cert		
	KS	Gini	Discrimination	KS	Gini	Discrimination	KS	Gini	Discrimination
All accounts	55.5	71.4	2164	43.3	56.7	1277	44.3	57.3	1247
Variable Rate	50.3	63.4	1562	N/A			N/A		
Fixed	38.2	50.1	924						
BOE / Capped	47.3	63.2	1779						
Discount	56.0	70.6	1982						
All Accounts (Good @ outcome)	55.6	71.6	2178						

Ginis within individual products are likely to increase with the use of product level models

Results – Marginal Churn Rate by Score Band



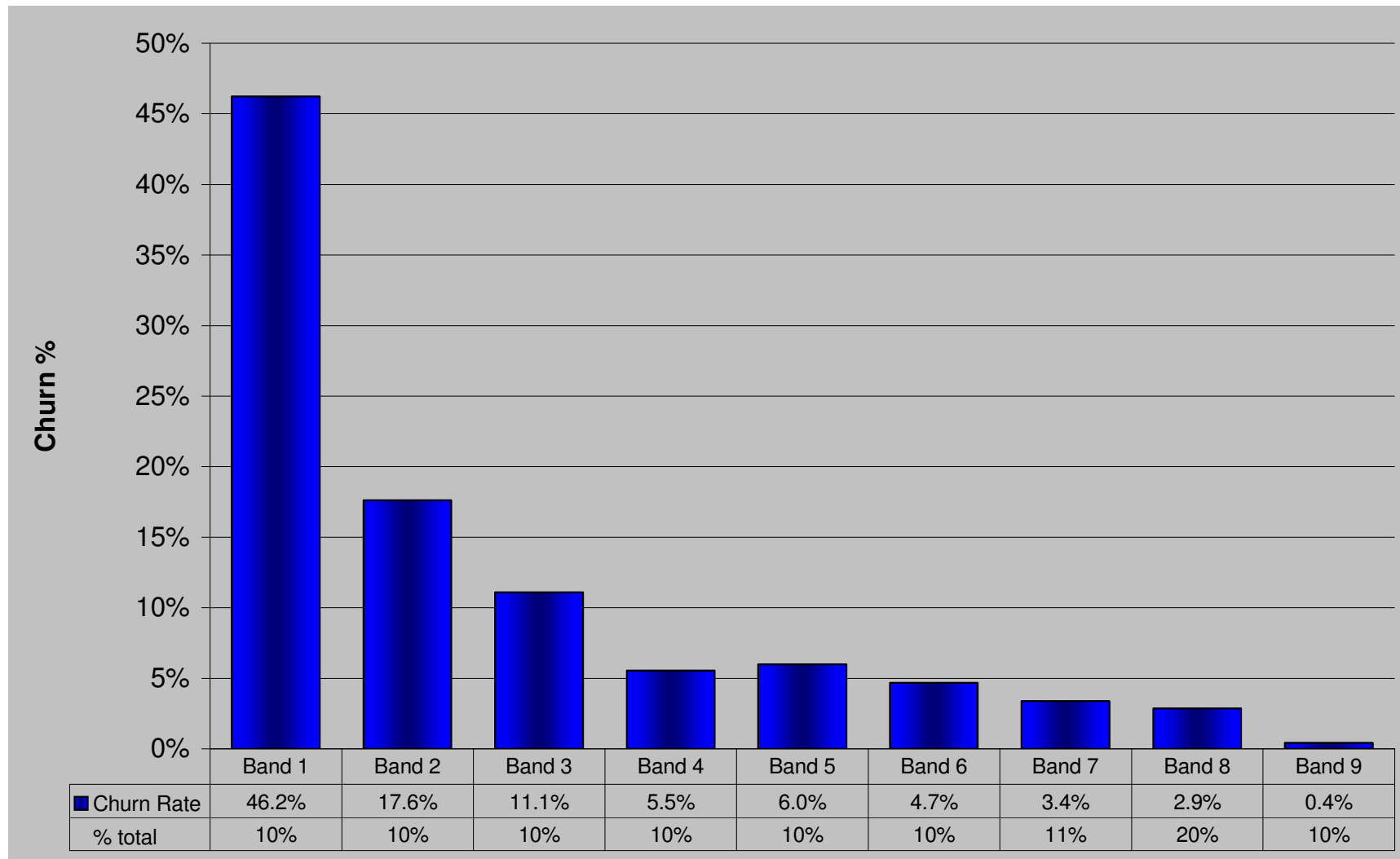
Prime Scorecard Performance



Results – Marginal Churn Rate by Score Band

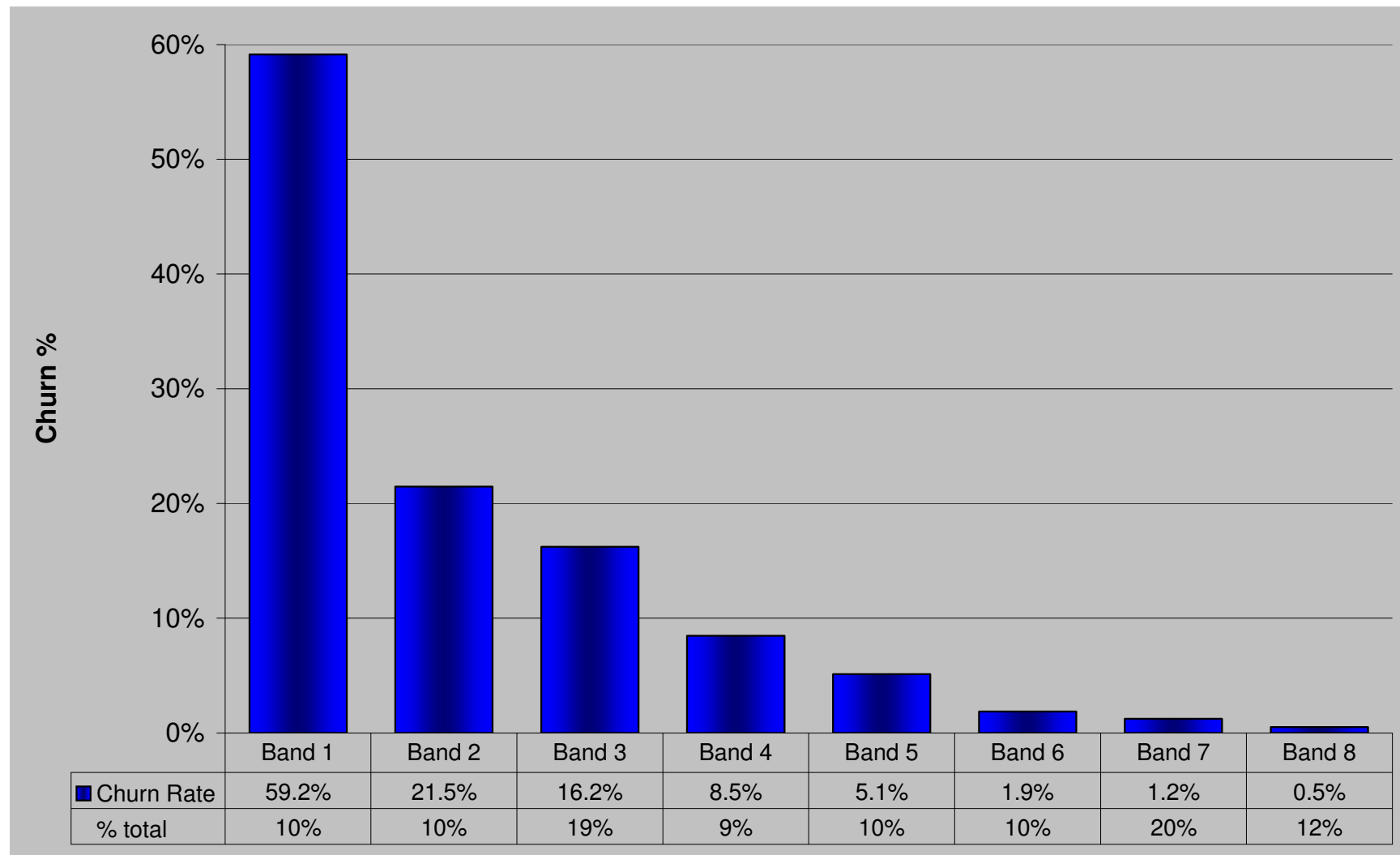


Prime Scorecard Performance – Variable Rate



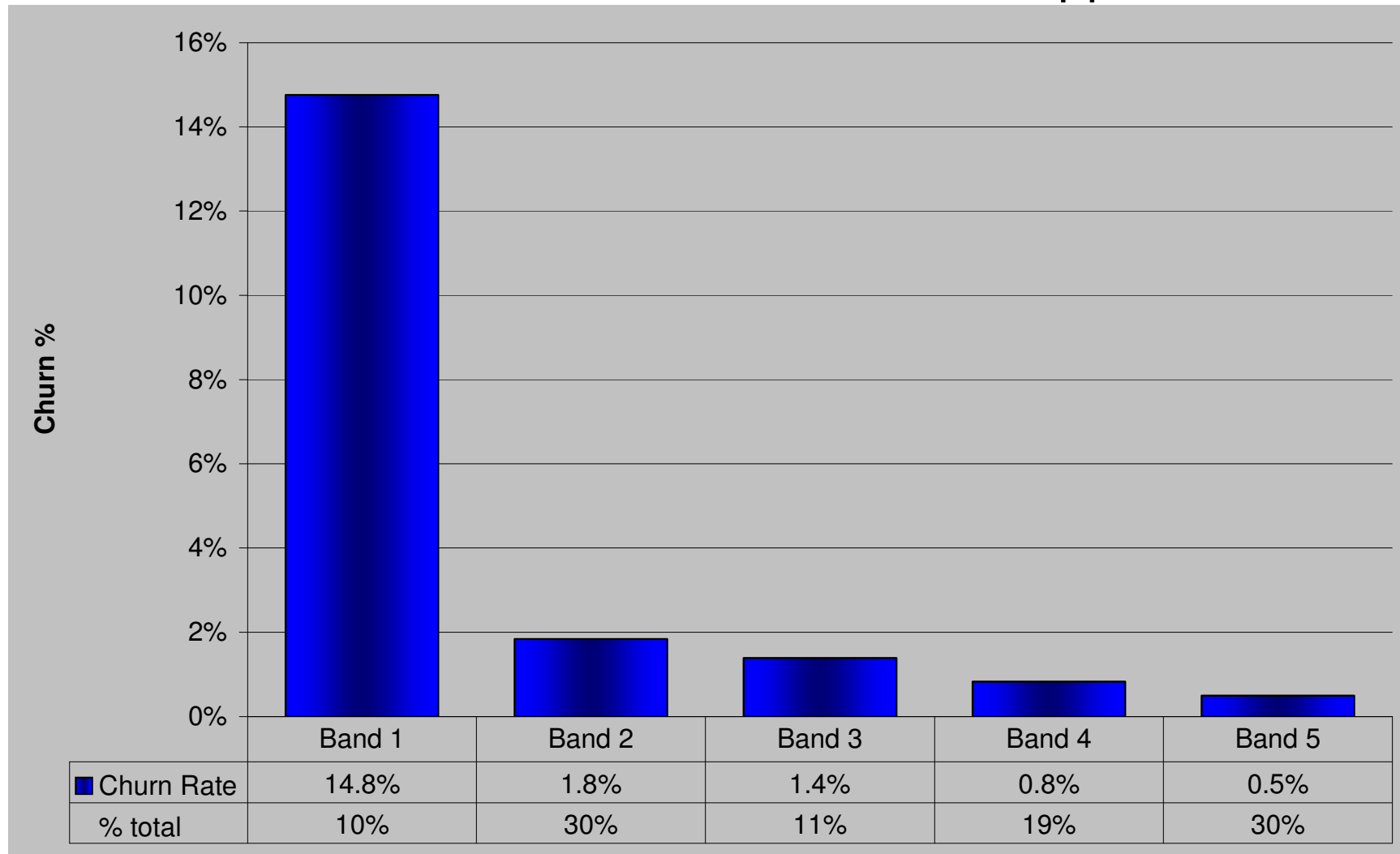
Results – Marginal Churn Rate by Score Band

Prime Scorecard Performance – Discount



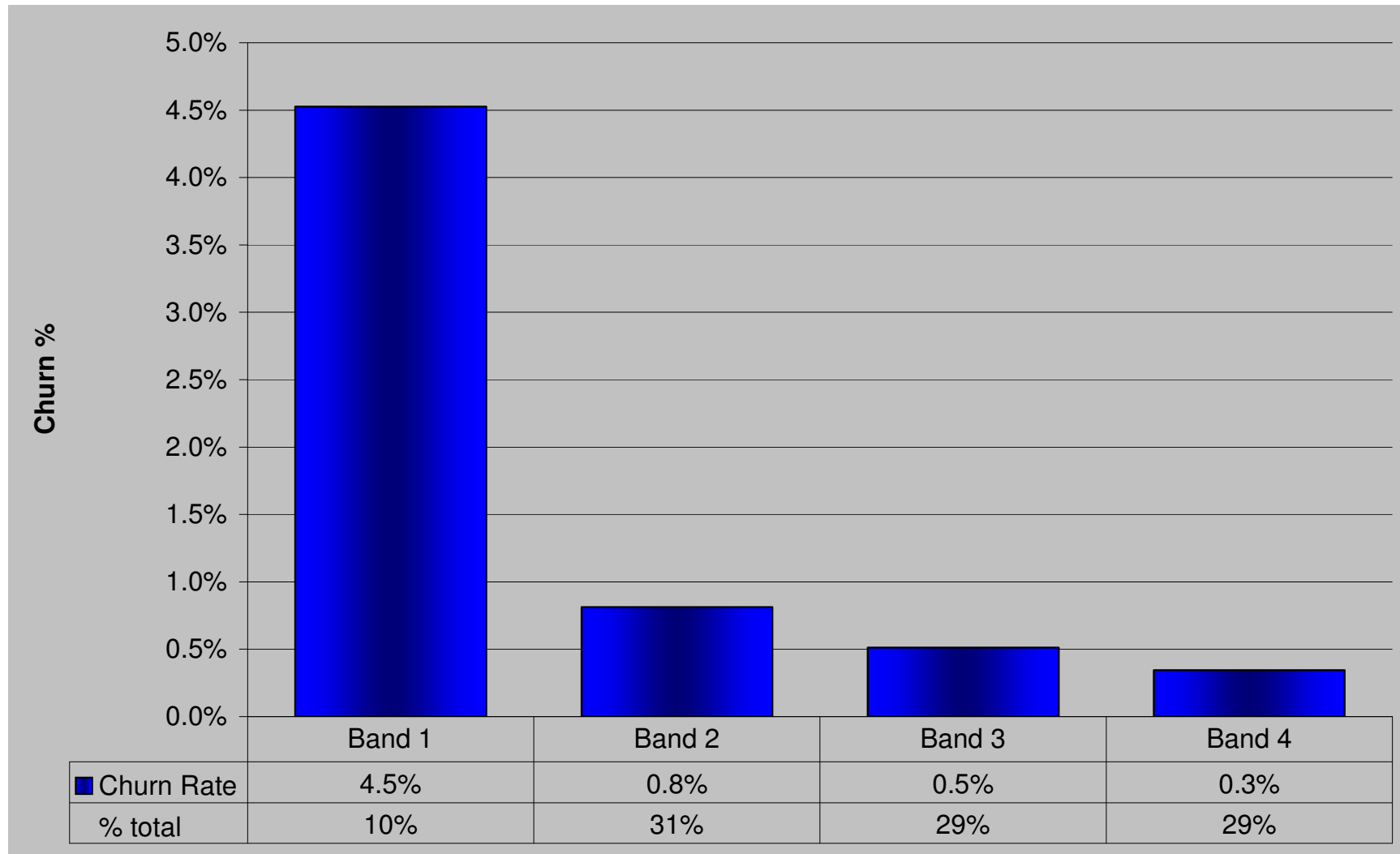
Results – Marginal Churn Rate by Score Band

Prime Scorecard Performance – Tracker / Capped



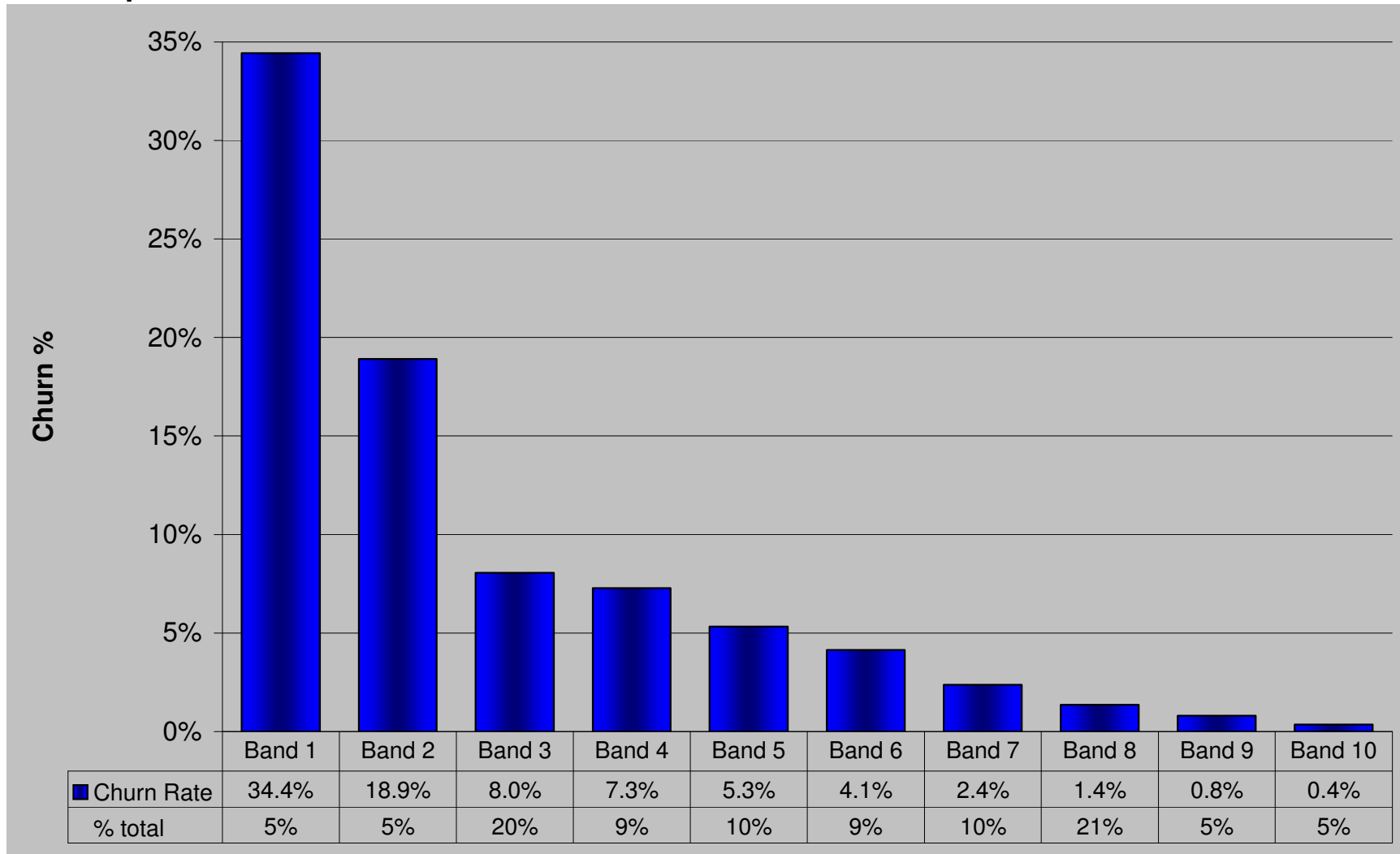
Results – Marginal Churn Rate by Score Band

Prime Scorecard Performance – Fixed Rate



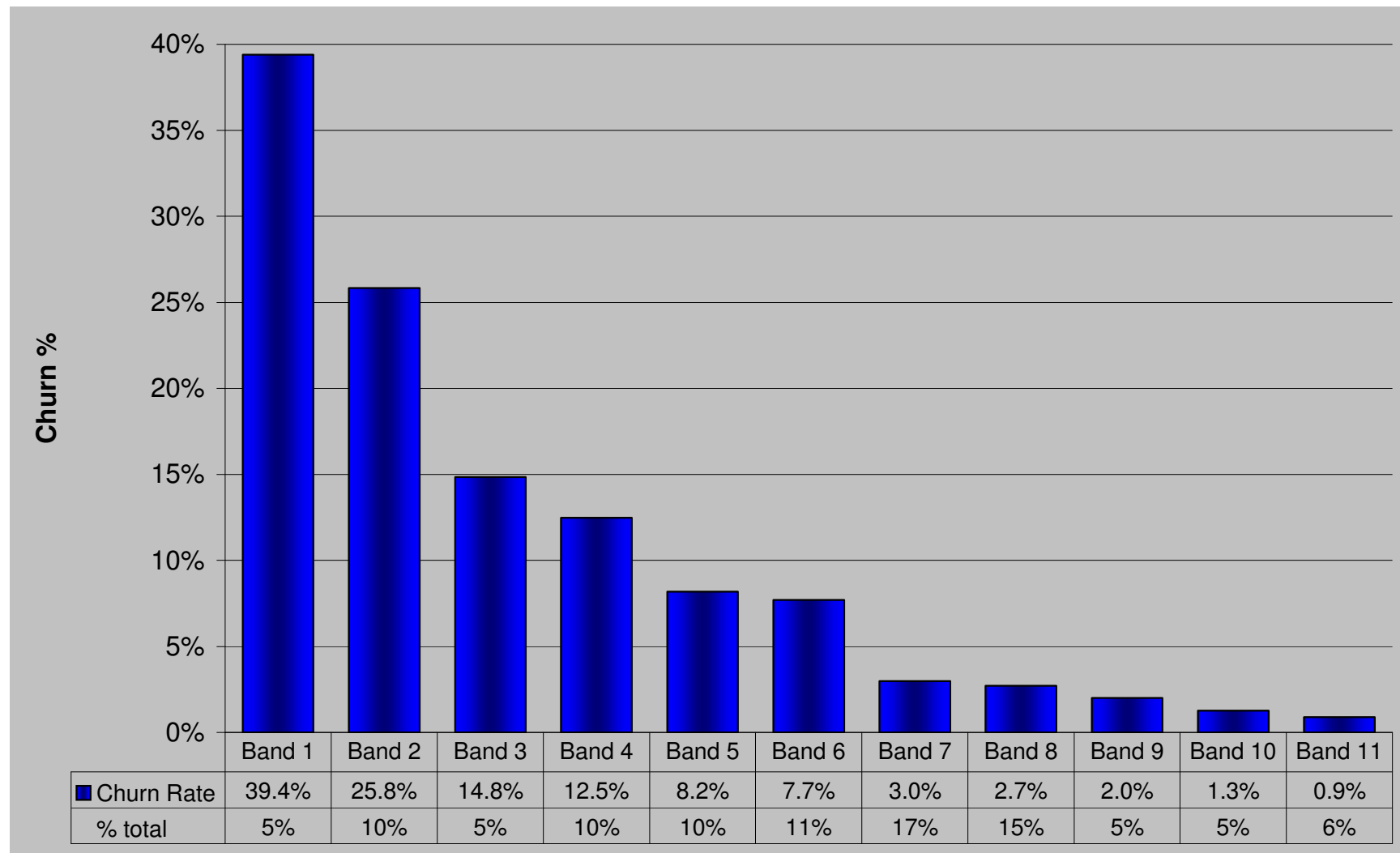
Results – Marginal Churn Rate by Score Band

Sub-prime Scorecard Performance



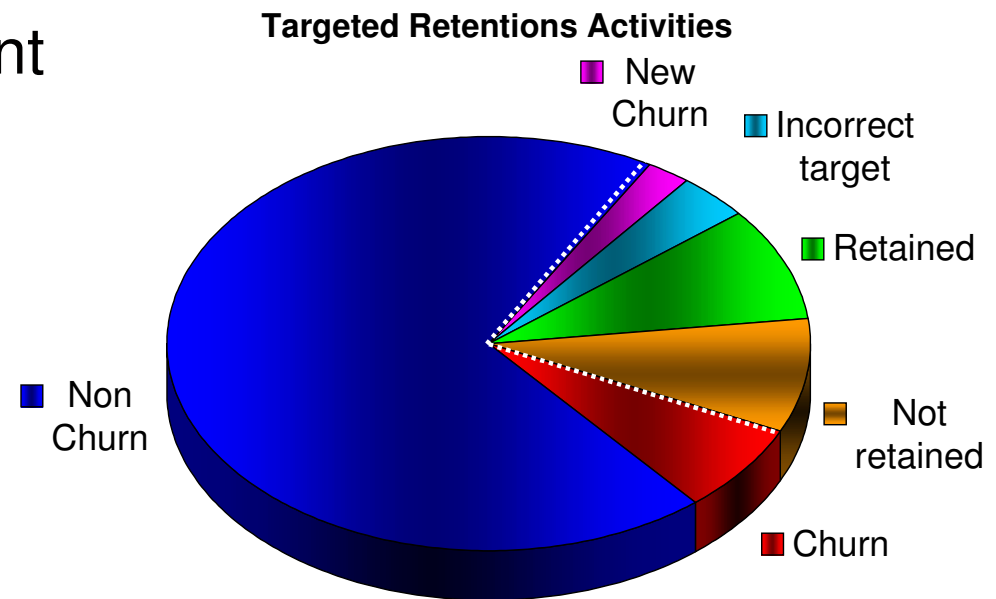
Results – Marginal Churn Rate by Score Band

Self Cert Scorecard Performance



- Churn rates 6.5% to 9.7% (6 month outcome)
- Model Gini's 56 to 71
- Marginal churn rates from 52.1% to 0.2%
- Predicts for performing accounts (voluntary churn)
- Predict across all account type Gini's from 50 to 70

- Will the cost of activities be offset by the value of retained business?
 - Cost of models and systems
 - Cost of retentions activities
 - False churn identification
 - Profit from a retained account
 - Loss on churn account



- How will strategies be defined?
 - Existing data & simulation
 - Champion challenger
 - or
 - Optimisation

Data for this analysis is available within 6 months

- How will strategies be implemented?
 - Software and consultancy are available for solutions with varying degrees of complexity

- How will the success of the strategies be measured?
 - Set Key Performance Indicators and assess at regular intervals
 - Level of churn
 - Retention from targeted accounts
 - Cost of retention activities
 - Bad rate on active book

- We *can* identify churn
- Optimum models utilise account management and bureau data
- Churn & risk models should be used to target the good customers we want to keep
- Segmentation by account type will further enhance retention strategies
- Strategies should seek to target the true reason for churn

Emphasis no longer purely on recruitment

Profit
Market Share
Portfolio Growth

The industry is turning to retention

Questions?