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VantageScore[SM]

Market Needs

VantageScore is the direct result of industry demands for:

- **More risk model options**
- **Model the performs consistently at all three credit reporting companies**
- **Highly predictive model developed on credit bureau data**
- **Coordinated approach for model releases and updates**

To meet these needs, TransUnion, Equifax and Experian worked together to develop VantageScore

Worked with a professional consulting company for oversight, coordination and documentation

VantageScore is the only scoring model to be jointly developed by the three credit reporting companies (CRCs). And TransUnion is the key to getting the most from VantageScore.

Our dedicated team works closely with you to determine your ideal testing and implementation strategy to ensure that you enjoy all the benefits:

Highly consistent

Highly predictive

Easy implementation and use

Highly Consistent

By combining unique data design and patent-pending credit characteristic leveling, VantageScore delivers:

More consistency in your credit decisions when applying the same attributes to different sets of data

Simplified credit decisioning with a single policy that can be used across credit reporting companies

Data Design

Development sample encompasses the needs of credit issuers and results in a model that reflects the comprehensive nature of CRC data

Each CRC randomly sourced the same 5 million files to create a merged list of approximately 15 million depersonalized credit files

One randomly selected trade from each depersonalized consumer file was used to forecast credit performance over a 24-month period

Each CRC contributed its respective data at the same point in time to reduce variability and allow for true tri-bureau characteristics leveling

Resulting sample selection includes the following credit populations

- **Credit files from all markets (national sample)**
- **All types of accounts (installment, real estate, revolving, finance, etc.)**
- **All types of consumers (thin file, thick file, clean, dirty, previous bankruptcy, etc.)**

Sampling Methodology

Equalization of Bureau Contribution

- **Files sourced from the three bureaus were randomly sampled down to represent 1/3 of the starting sample**

EQ 33%	EX 33%	TU 33%

Development/Validation Samples

- **Sample was split 50/50 between development and validation**

Development 50%	Hold-out 50%

Weighting of Good/Bad/Indeterminate

- **All bads within the 50% development sample were kept, while goods were sampled down to a 3 good to 1 bad ratio**

Bads 25%	Goods 75%

Performance

Performance was categorized based on the worst performance of a randomly chosen trade

Performance window for VantageScore is June 2003 to June 2005

Selected trade was classified into one of three categories

- **Bad – 90+ days past due, including internal collection, charge off, repossession, foreclosure and bankruptcy (trade and public record)**
- **Good – current or 30 days past due**
- **Indeterminate – 60 days past due**

Indeterminate trades were not included in the development sample

Using a randomly chosen trade for performance more closely reflects the true likelihood of a consumer's bad performance by implicitly taking into account the proportion of bad accounts on the consumer's file at performance.

Highly Predictive

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Characteristic Leveling Overview

Inconsistent characteristics inherent across CRCs

Characteristic leveling:
- **Yields consistent and equitable definitions across CRCs when same data present**
- **Only attainable with the combined understanding of all CRC nuances**

Philosophical leveling:
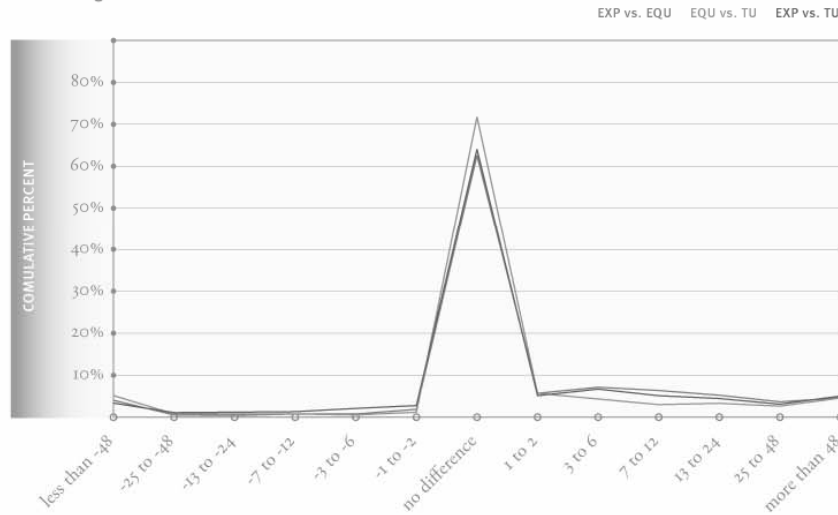- **Modify specs to incorporate logical concepts that align with all three CRCs**

Numerical leveling:
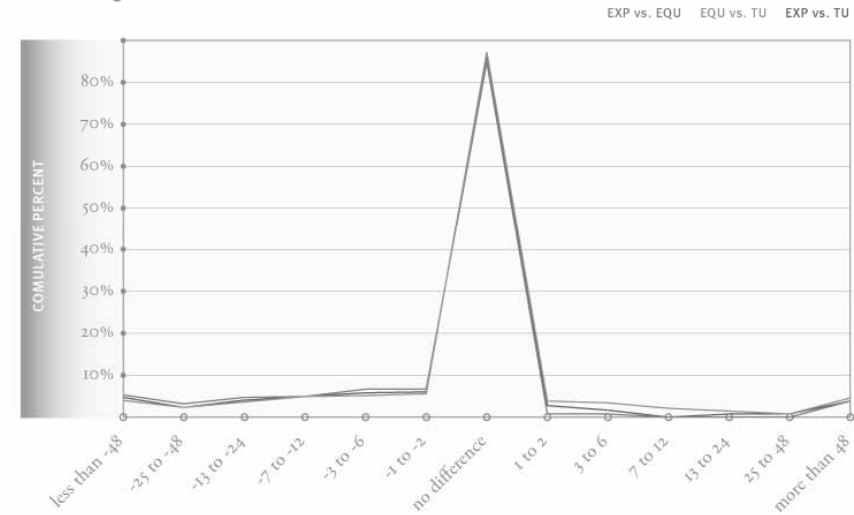- **Modify specs to make filters and characteristics from each CRC as close as possible**

Characteristic Leveling Process

Months since most recent derogatory item on trade

Pre Leveling
EXP vs. EQU   EQU vs. TU   **EXP vs. TU**

COMULATIVE PERCENT

80%
70%
60%
50%
40%
30%
20%
10%

less than -48, -25 to -48, -13 to -24, -7 to -12, -3 to -6, -1 to -2, no difference, 1 to 2, 3 to 6, 7 to 12, 13 to 24, 25 to 48, more than 48

Post Leveling
EXP vs. EQU   EQU vs. TU   **EXP vs. TU**

COMULATIVE PERCENT

80%
70%
60%
50%
40%
30%
20%
10%

less than -48, -25 to -48, -13 to -24, -7 to -12, -3 to -6, -1 to -2, no difference, 1 to 2, 3 to 6, 7 to 12, 13 to 24, 25 to 48, more than 48

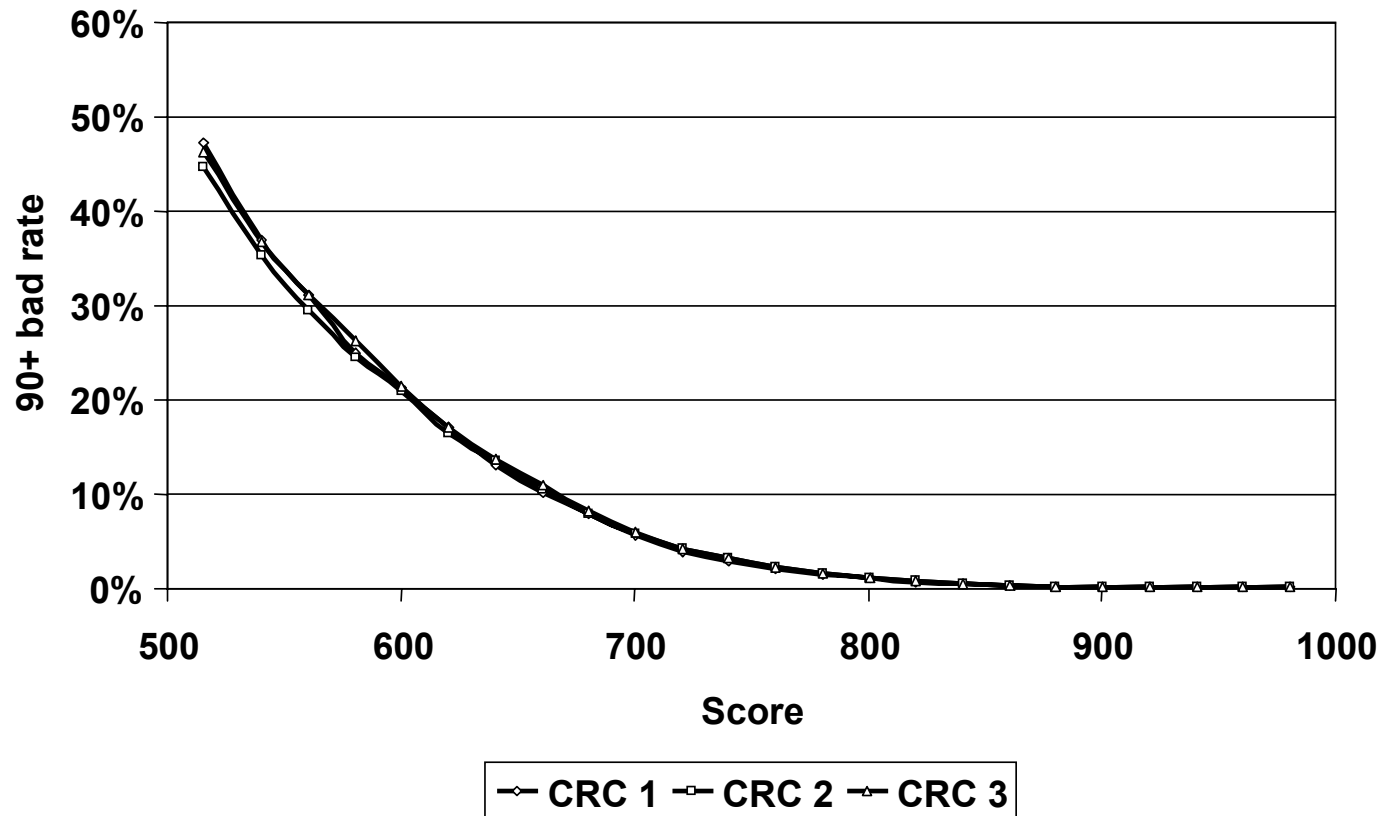**Differences between CRCs reduced from 35% to 23%**

Extreme differences (more than 48 months) reduced by 2%
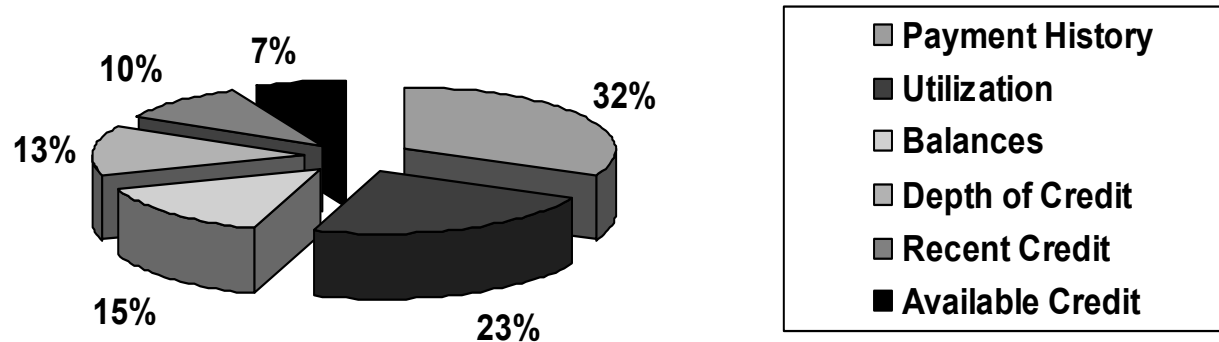
Cross-bureau biases were removed

- Pre-leveling differences varied as much as 10%
- Post-leveling differences vary by no more than 1%

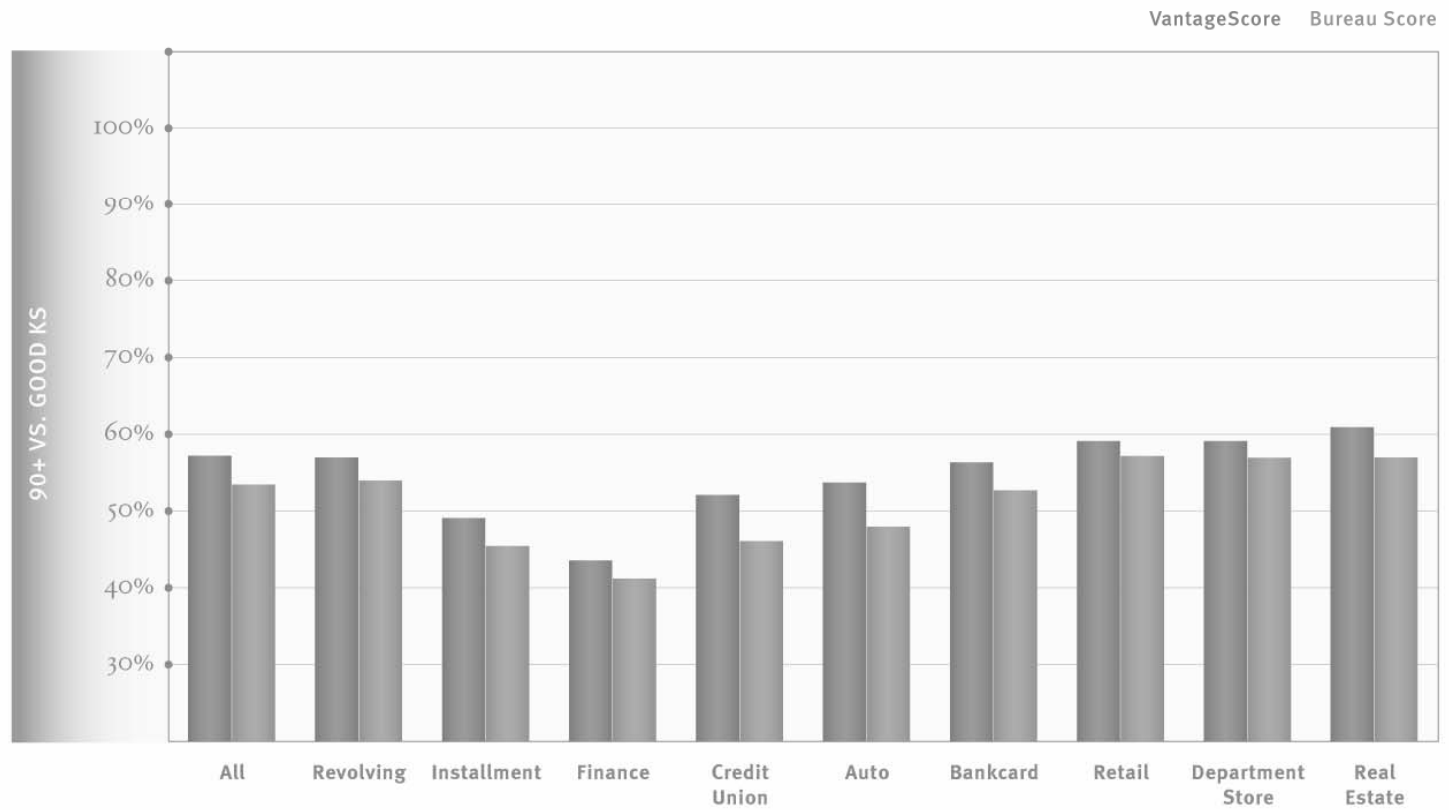# Overall Performance of New Accounts

Interval Bad Rate by CRC

Characteristic Contribution

Payment History	Repayment behavior (satisfactory, delinquency, derogatory)
Utilization	Percentage of credit amount used/owed on accounts
Balances	Amount of recently reported balances (current and delinquent)
Depth of Credit	Length of credit history and types of credit
Recent Credit	Number of recently opened credit accounts and credit inquiries
Available Credit	Amount of credit available

TransUnion Performance

VantageScore   Bureau Score

90+ VS. GOOD KS

100%
90%
80%
70%
60%
50%
40%
30%

All   Revolving   Installment   Finance   Credit Union   Auto   Bankcard   Retail   Department Store   Real Estate

- VantageScore's overall predictive performance has been thoroughly validated through rigorous testing

Increased predictive strength means better risk management performance

Specific scorecard identifier returned with score, including a profile description of the consumer

Differentiates risk associated with specific credit types and depth of consumer experience

Segmentation Methodology

Cutting-edge segmentation techniques were developed using the collective expertise of all three CRC's to deliver outstanding results

Attribute- and score-based techniques were combined:

- **Attribute-based**
  - **Previous bankruptcy – yes or no**
  - **Thin or thick file**
    (Thin – one or two accounts; Thick – three or more)

- **Score-based**
  - **Risk segmentation score**
  - **Bankruptcy/bad profile segmentation score**

Each scorecard was cross-validated on data provided by each CRC to provide virtually the same risk evaluation at each CRC

Scorecards were scaled consistently across each CRC to create a score range from 501-990 that accommodates natural A, B, C, D and F grade intervals

Segmentation Benefits

Segmentation scheme incorporates business logic and empirical evaluation to enhance performance

Use of segmentation scores

- **Reduces shifting between scorecards**
- **Results in a more stable score**
- **Improves performance across prime/ near-prime/sub-prime credit markets**

Inquiry attributes are not included in segmentation scores, which makes scores more stable

Use of a bankruptcy profiling segmentation score improves overall bad capture rates

Segment identifiers can be used to enhance decision making or assist in isolating populations of interest
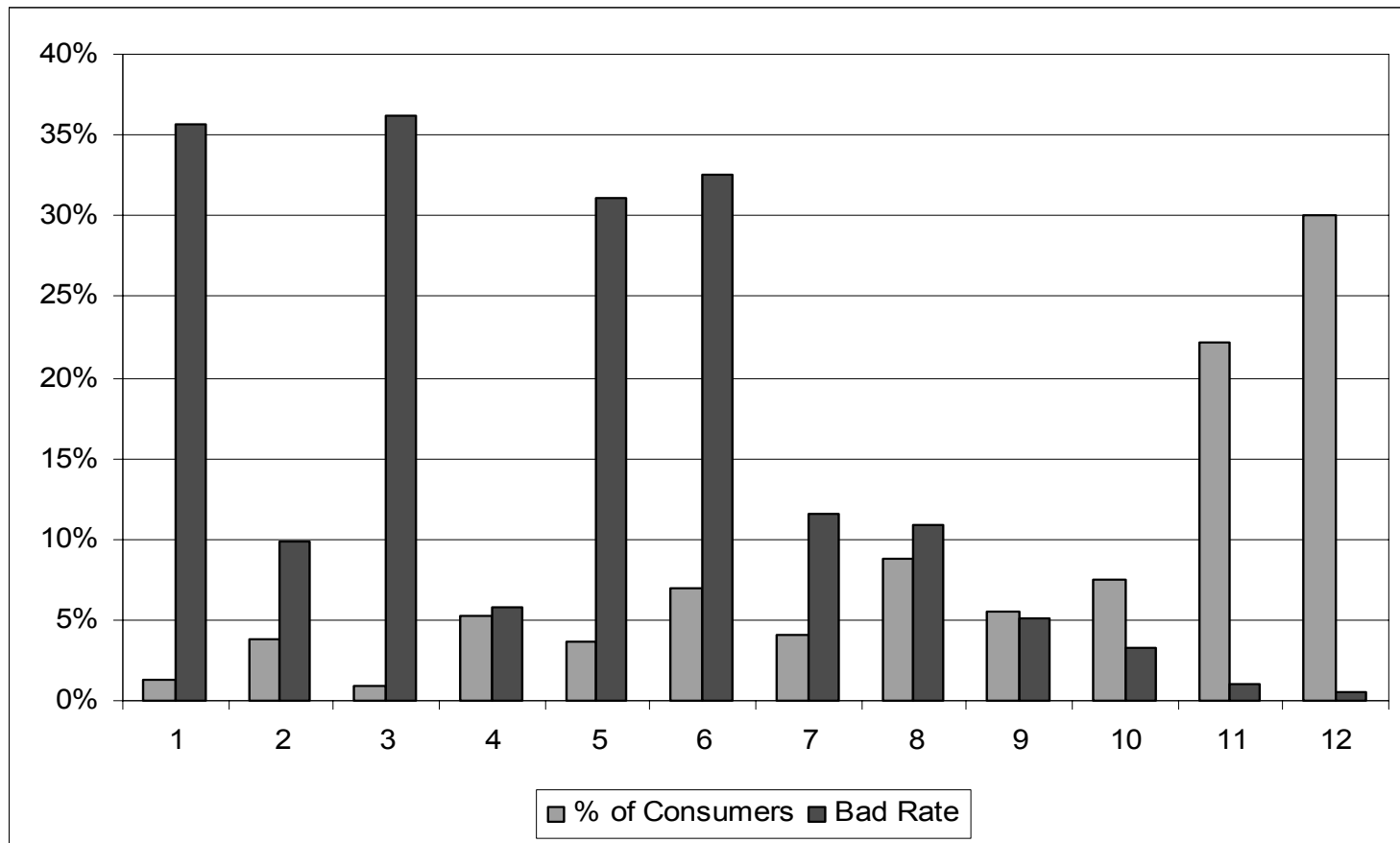
Segmentation Schematic

Scorecard Distribution
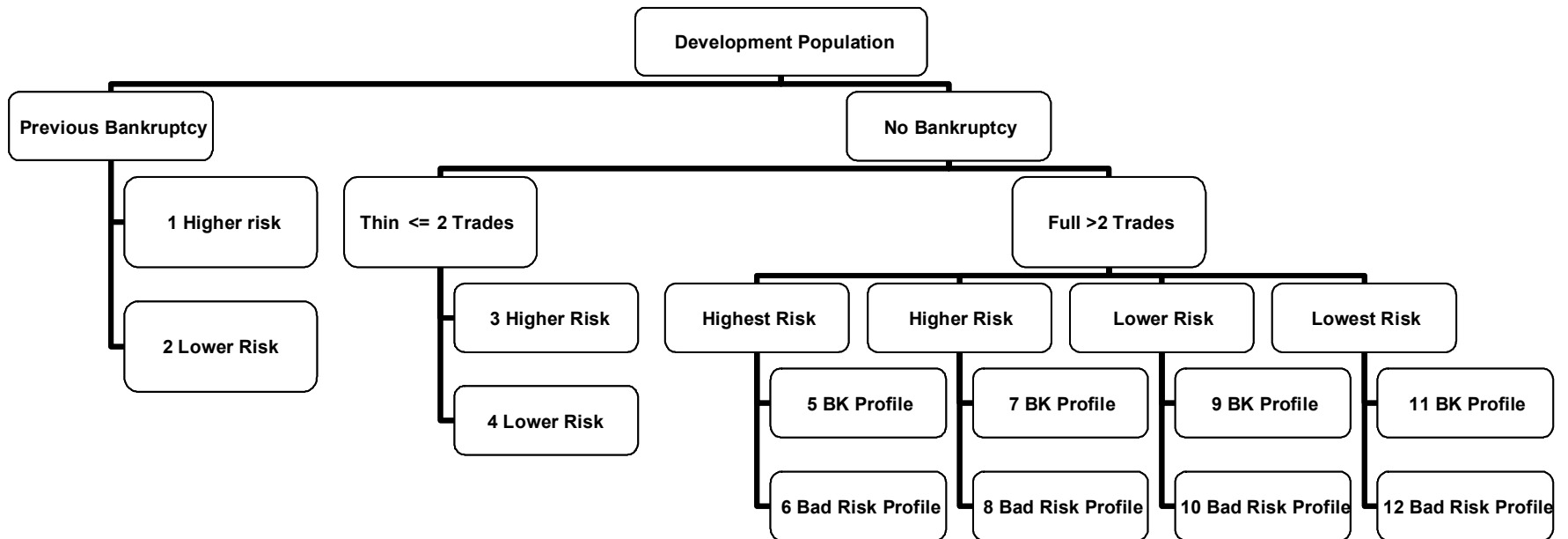
Scorecard Distribution

VantageScore Development Sample (using 90 DPD+)

Inquiry Deduplication

Inquiry deduplication prevents penalizing consumers who are shopping for a home or auto loan

Multiple inquiry deduplication:

- **Auto, mortgage and non-telco utility inquiries occurring within a 14-day period are counted as a single inquiry**

- **Consumers are not penalized for shopping for more favorable rates**

- **Analysis proved 14-day period was optimal and buffer period not needed**

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Easy implementation and use

Exclusion Codes

All three CRCs will return the following exclusion codes:

Exclusion	Exclusion Code	Exclusion Criteria
Deceased	001	File/trade indicating consumer is deceased
Lack of Trades	002	No non-excluded* trades on file
Lack of Activity	003	Non non-excluded trades reported within 24 months and no consumer-initiated inquiries within 24 months

Availability and Continuity

VantageScore is available through all TransUnion's credit reporting channels

- **Odds-to-score relationship consistent across all CRC's**

- **Uniform Adverse Action codes across all CRC's**

- **Limited exclusion criteria reduces unscoreable files**

- **Coordinated releases and updates**

- **Full support and expertise of TransUnion consultants**

Score Scale

Straightforward score range makes it easier for your customer support professionals to understand and explain
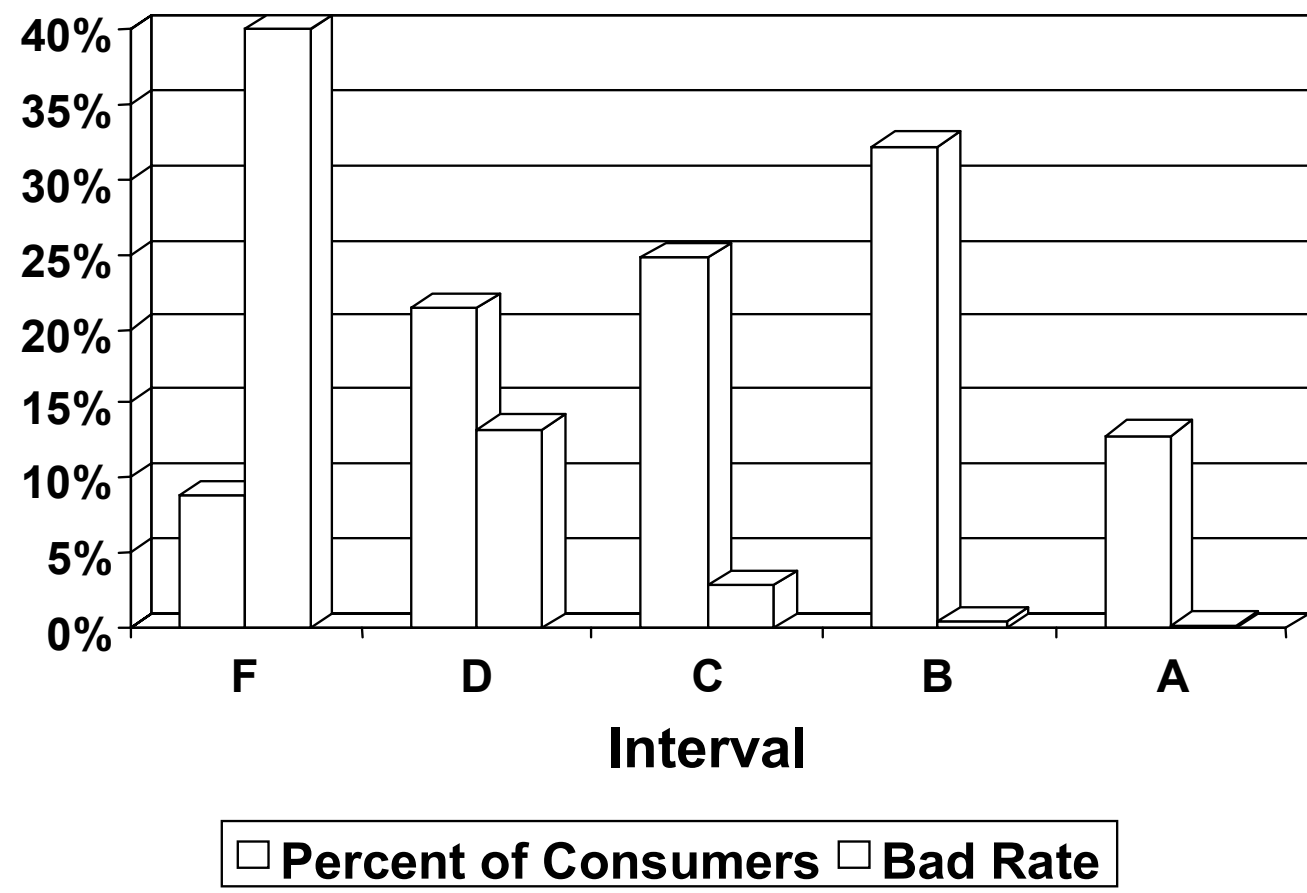
A, B, C, D and F score grads are simple for consumers to understand the meaning of their scores

- **A: 901-990**
- **B: 801-900**
- **C: 701-800**
- **D: 601-700**
- **F: 501-600**

Valid score range of 501-990

- **The higher the score, the lower the risk**

Score Scale Distribution

Adverse Action Codes

Simplify credit policy management with the same Adverse Action codes from all three CRC's

Simple alpha-numeric system (2-position field) enables lenders to identify quickly the type of account related to adverse action

- **I – Installment**
- **B – Bankcard**
- **A – Auto**
- **M – Real Estate**

Up to four codes returned plus FACTA inquiry code

Adverse action statements are available in Spanish

Score Comparison / Migration Sample

Risk Grade	TransUnion New Account 2.0	Probability of Default	Bad Rate	VantageScore
A+ Paper	894 - 950	171.2 to 1	≅ 0.58%	811 - 990
A Paper	825 to 893	72.3 to 1	1.36%	771 - 810
B Paper	737 to 824	25 to 1	3.84%	711 - 770
C Paper	670 to 736	12.3 to 1	8.0%	651 - 710
D Paper	606 - 669	7.3 to 1	13.2%	631 - 650
E Paper	<606	3.6 to 1	≅ 21.7%	<631

Complete Implementation Support

Get the complete, comprehensive support you need to take full advantage of VantageScore

TransUnion maintains a dedicated team to apply an in-depth understanding of your business, determine your ideal testing and implementation strategies and then help you implement the score and modify your business rules

Single source for data and score means that when you use TransUnion data to drive VantageScore, you can contact us for superior customer support for both the score and the data

Next Steps

Put VantageScore to work for you today

Validation options

Retro Validation

Live Testing

- **Online**
- **Prescreen**
- **Account Review**

Custom Analysis