Research Results: Testing New Data Sources for Improved Subprime Decisions

Presented By Jimmy Nam, Peter DeForest,
Portfolio Defense Consulting Group
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Current Situation

- Common CB predictive variables in use for many years
- Predictive models rely heavily on application, deal, and CB variables
- There is little innovation in model segmentation schemes
- Model re-builds become “re-weighting” with new performance, not optimizing or building best models
- Diminishing predictive returns

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Population

- Deep Subprime applicants
- CB scores into low 500's and high 400's
- Used Auto purchasers
- Southeast and Southwest

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Benefits of Subprime

- Fast performance results (portfolio seasons quickly)
- Relatively small predictive improvement can have substantial financial benefits
- Many possible “sweet spots”
- Models here have lower KS than for prime populations (bigger upside)

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Evaluate Results – Analytic

- Two separate studies
- Model performance dataset(s)
- Append external data/scores
- Examine hit rates
- Are variables/scores intuitive
- Incremental predictive power (KS, trade off curves, distributions)

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Evaluate Results - Business

- Cost versus benefit
- *How many incremental charge-offs identified?*
- Savings per charge-off?
- Reduction in volume?
- Costs of data purchase (for all applicants)
- Implementation costs?

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Implementation Issues

- How to best combine different scores or data sources
- Simplify implementation and tracking
- “Adjustor” approach

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Adjustor Implementation

- When evaluating two scores
  - Look at matrices of data
  - Determine rank-ordering stairstep tiers
- How about 3 or more scores?
- There are interactions to consider

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Adjustor Implementation

- Determine grade/tiers from matrix of custom & generic scores (Best Start)
- Within each grade – determine how the 3rd score effects performance

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New Data/Scores Evaluated

- Subprime “bureau”
- Fraud prediction score
- Debit data

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Subprime “bureau” results

- Good hit rate for this high-risk population – best in highest risk segments
- Highly correlated to credit bureau data – less benefit on margin
- Just under 10% increase in predictive power
- Not helpful with thin file and ‘no hit’ applicants

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Fraud Score results

- On margin there is some lift in predictive power over the matrix
- Most helpful with highest risk segment
- More challenging implementation

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Debit results

- On margin there was generally more lift over the matrix
- When used in combination with the Fraud Score, accounted for most of the marginal benefit
- More manageable implementation

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Fraud and Debit results

- Average lift in KS of 25% across 7 models (some with huge lift, some with smaller lift)
- Combined – most of the marginal benefit can be explained by the Debit bureau data

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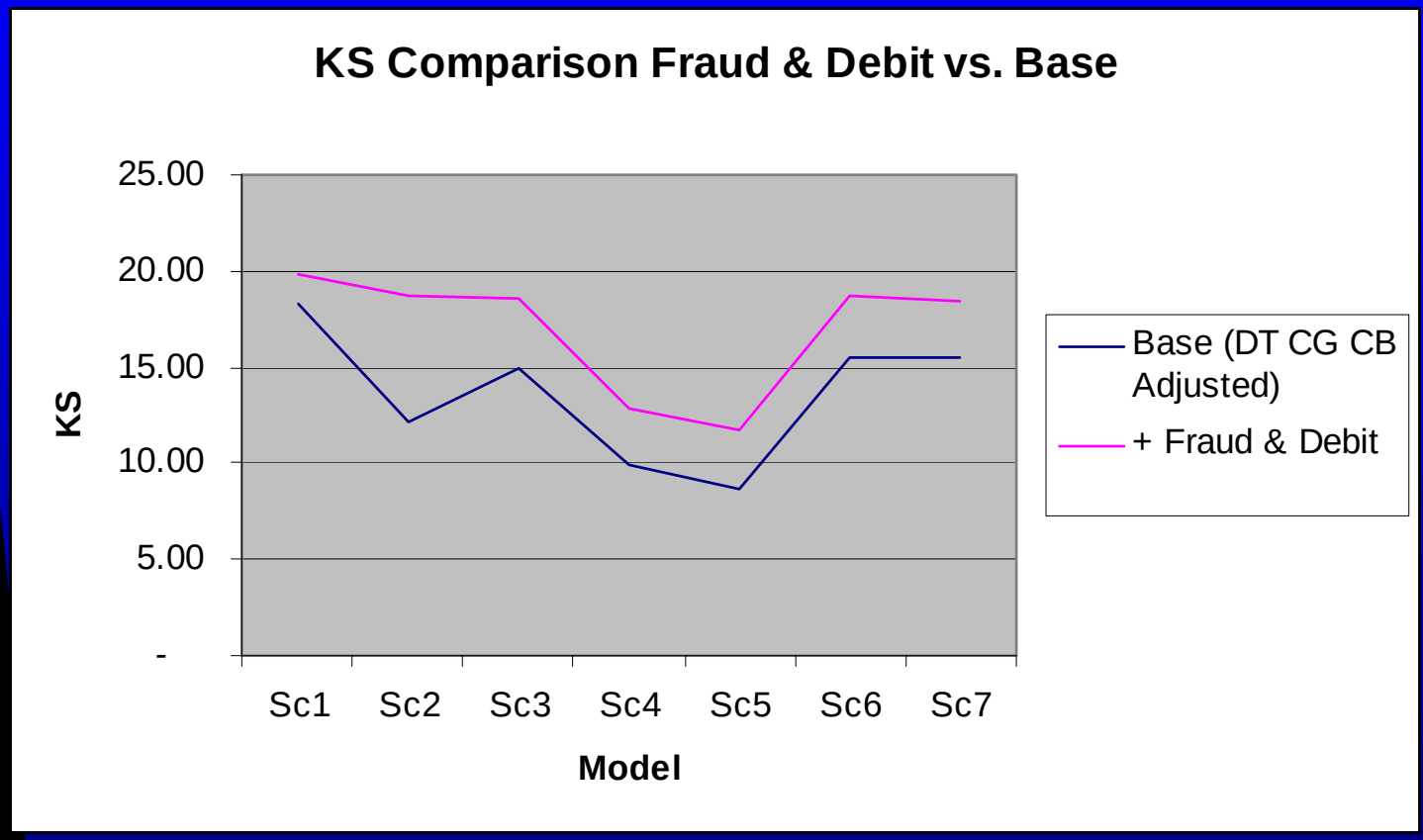
Fraud & Debit results



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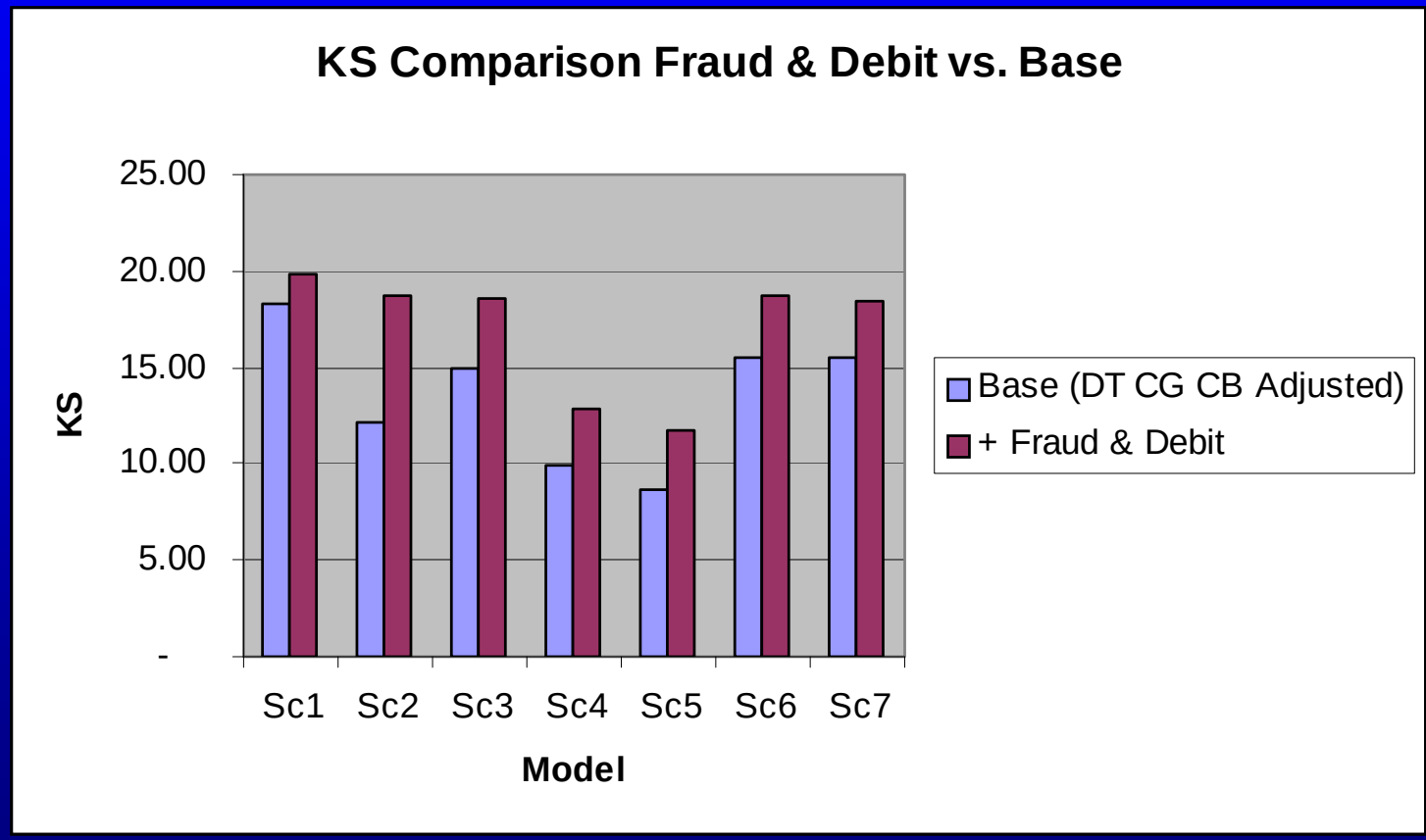
Fraud & Debit results



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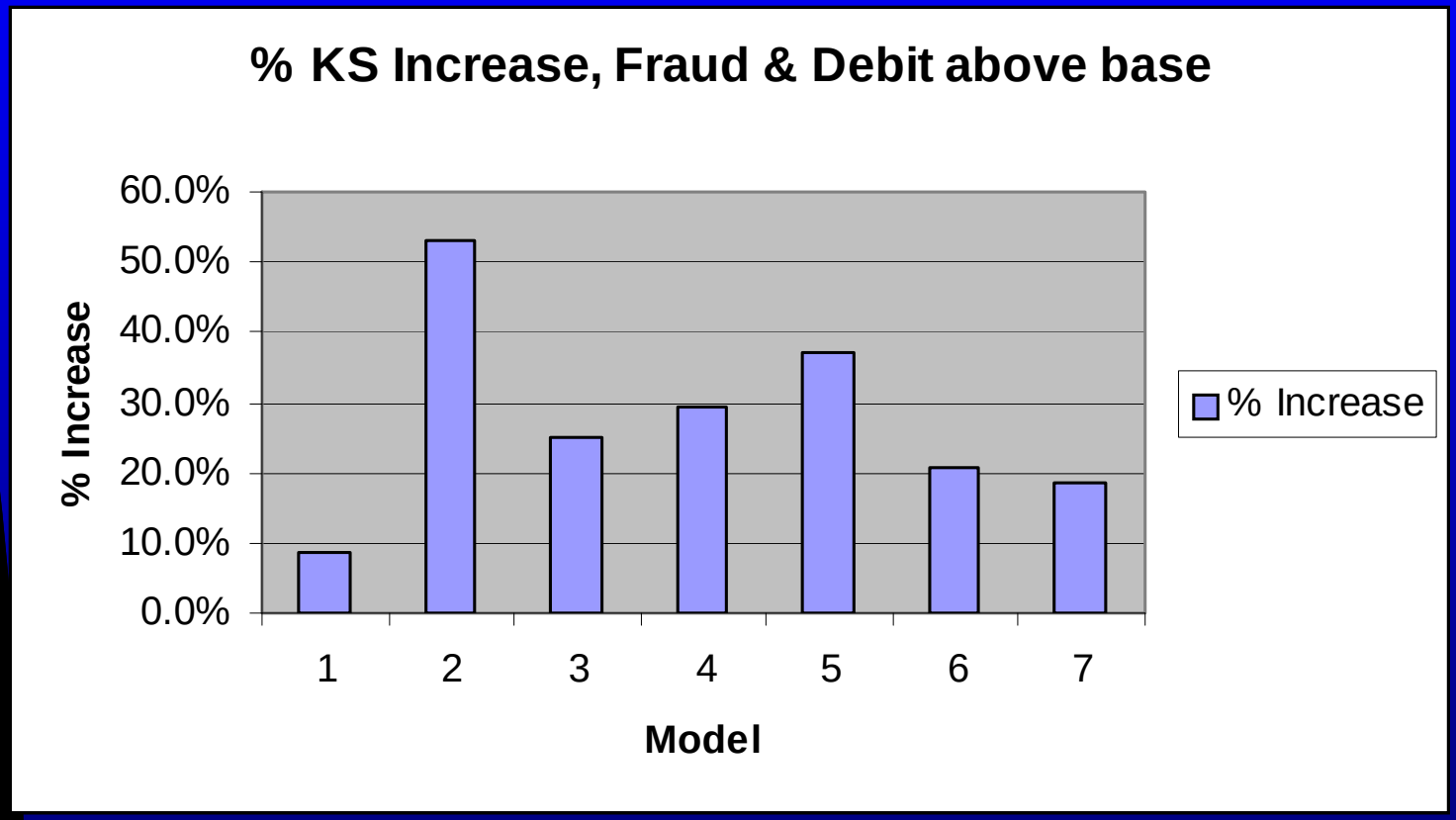
Fraud & Debit results



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Financial Questions to Answer

- Incremental losses saved?
- Impact on volume?
- Cost of data?

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Estimated Financial Benefits

- Annual Originations $580 Million
- Reduced Volume $8 Million
- Incremental reduction in Net Loss $1,500,000 (Fraud and Debit score)
- Foregone profit from reduced volume $750,000
- Data cost $200,000
- Net benefit $550,000

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In closing

- Discussion and Questions

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