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Maximizing
the Credit Universe

Contents

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Maximizing the Credit Universe

INTRODUCTION

One result of more conservative lending practices following the Great Recession has been the incorporation of judgmental criteria in lending strategies which give greater scrutiny of any previous bankruptcy and that require consumers to have a "thick file."[1] The implicit assumption of the criteria is that more information on the consumer credit file enables a better assessment of the consumer's risk level.

This paper will show that qualitative criteria of this nature may not only fail to reduce origination risk, but can also substantially reduce the accessible lending universe for reasons unrelated to consumer risk assessment.

This paper contains two sections. First, a review of the data and analytic processing elements, such as the composition of the credit file, consistency of file composition across the primary three national reporting companies (CRCs) and credit score model design. Each element will be discussed and its impact on the accessible universe evaluated. The review will show that for certain judgmental criteria lending strategies, they can reduce the lending universe by as many as 60 million consumers.

Second, a case study analyzes the impact of these elements on a sample mortgage originations strategy. The case study demonstrates how the strategy can be enhanced to expand the universe by 19 million consumers and simultaneously lower the overall risk of the originated loan portfolio.

1 "A consumer with less than three credit accounts or "trades" in his or her credit file is defined as having a "thin file" whereas a consumer with three or more accounts/trades is defined as having a "thick file."

IT'S NOT JUST THE VALUE OF THE SCORE THAT DEFINES THE CREDIT ACCESSIBLE UNIVERSE…

The size of the credit accessible universe, i.e., the number of consumers who satisfy a lender's risk criteria within a specific strategy, is not simply a function of whether their credit scores reflect sufficiently low likelihood of default.

The size of the universe is also conditioned upon the following (Figure 1):

- Does the consumer have a consumer credit file at one or more of the CRCs?
  - What is the composition of their file?
    - How many accounts are on the file?
    - How old are the accounts?
    - How often are these accounts updated?
  - Is the composition of their credit file the same at all CRCs?
- Given the minimum data processing criteria of the lender's scoring model, does the consumer's credit file contain sufficient data to be scored?
  - Can the consumer be scored at all three CRCs if they have different file composition at each CRC?
- And finally, does the consumer's score exceed the lender's cut-off threshold?

Depending on the lender strategy, the number of CRCs that the lender works with and the credit scoring model design, each of these three hurdles may substantially reduce the universe of consumers that the lender can access to offer credit.

FROM THE CREDIT ELIGIBLE UNIVERSE TO THE CREDIT ACCESSIBLE UNIVERSE…

The Credit Eligible Universe

As of the 2010 U.S. Census, 308 million people live in the United States; of which, 237 million (77 percent) are 18 years or older and may be eligible to receive credit. Using a 2010-2012 sample of consumers who were randomly selected from the three CRCs, roughly 220-230 million of the potentially eligible population have a credit file with at least one of the CRCs. This is the **credit eligible universe** – the universe of consumers who can be considered for lending.

A lender's **'credit accessible universe'** is the universe of consumers who are ultimately considered for credit *after* 'filtering' the eligible universe through the hurdles referenced in Figure 1.

Credit File Composition

The credit eligible universe of approximately 227 million individuals can be assigned the following file composition profiles (Figure 2).

- *Mainstream*
  - Typical credit users
  - 160 million consumers with at least three credit accounts that are frequently updated on their credit file (at least every 6 months)

- *Upsiders?*
  - Often consumers such as thin file consumers, infrequent users of credit, and new credit users that have the potential to be highly credit-worthy
  - 20 million consumers who have one or two accounts, i.e., a thin file that is frequently updated (at least every 6 months)
  - 13 million consumers with any number of accounts but who use credit less frequently, such that their credit file is updated within a 6 to 24 month window
  - 1 million consumers who may use credit frequently, but whose accounts are less than 6 months old

- *Minimalists*
  - Those that use credit only rarely but could be good loan candidates
  - 13 million consumers who rarely use credit, with updates to their credit file that are at least 24 months old
  - 13 million consumers with only derogatory information on their credit file

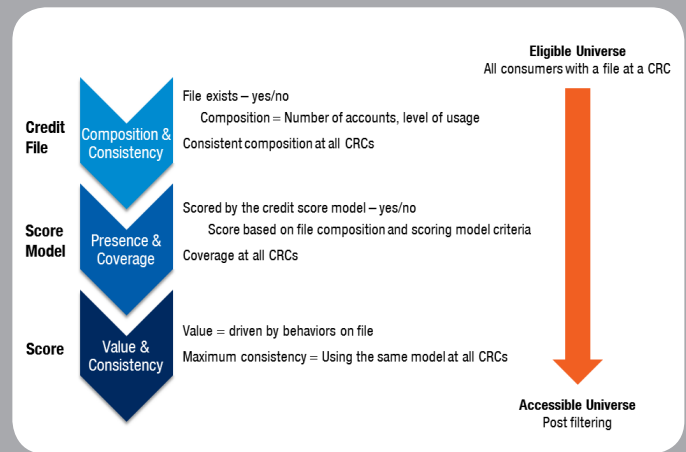**Figure 1: Credit-accesible universe conditions**

Figure 2: Credit file composition

| Number of Accounts	Frequency of Updates	Profile	Volumes (millions)
High (=>3)	High (within 6 months)	Mainstream	160
1 or 2	High	Upsiders?	20
Any	Moderate (6-24 months)	Upsiders?	13
<6 months old	Any	Upsiders?	1
Any	Low (>24 months)	Minimalists	13
Only collections or public records	Any	Minimalists	13
Inquiry only deceased		Ineligible	7

IMPACT: Strategies that require a mainstream file composition immediately exclude 60 million consumers

Figure 3: Model design criteria affect the eligible universe

| Profile	Volumes (millions)	Scored by Conventional Scoring Models	Scored by VantagScore 1.0 & 2.0	Scored by VantagScore 3.0
Mainstream	160	✓	✓	✓
Upsiders?	20	✓	✓	✓
Upsiders?	13	✗	✓	✓
Upsiders?	1	✗	✓	✓
Minimalists	13	✗	✗	✓
Minimalists	13	✗	✗	✓
Ineligible	7			

IMPACT: Lenders that use a conventional credit score model could exclude as many as 40 million consumers

Figure 4: Credit file composition across CRCs
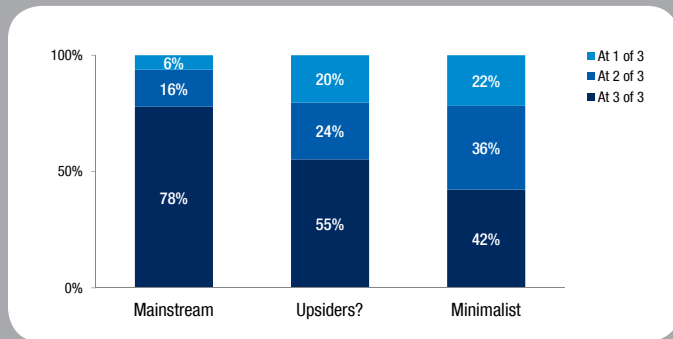
IMPACT: A strategy that requires the presence of a Mainstream file composition could lose as many as 36 million consumers if the consumers are sourced through just one CRC

Figure 5: Consumer credit use contributes to the eligible universe

Annualized Consumer Migration
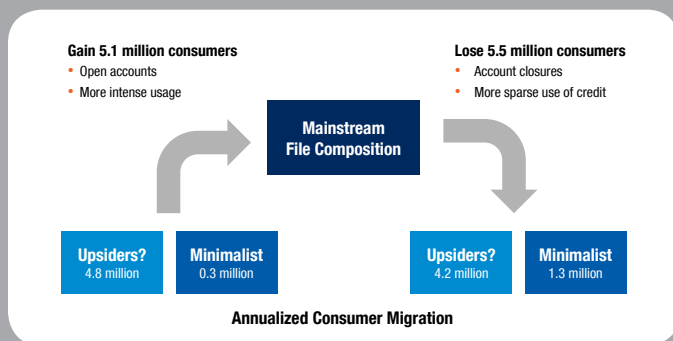
IMPACT: The accessible universe for a strategy requiring mainstream file composition can vary by +/- 5 million consumers as consumers migrate into and out of consideration given their changing credit usage pattern

- *Ineligible*
  — Consumers with inquiry-only information or who are deceased (7 million consumers)

Credit scoring model design

As credit scoring technology has improved over the last decade, more recently developed models have taken advantage of these improvements and are consequently able to score a larger percentage of the credit eligible universe. VantageScore 3.0 scores 220 million consumers (Figure 3). *See www.VantageScore.com/UniverseExpansion for a comprehensive discussion of VantageScore 3.0 scoring approach and the predictive performance results for these newly-scored consumers.*

File composition across CRCs

The composition of a consumer's credit file can vary at each CRC for many reasons. Lenders may report the consumer's credit information to the CRCs at different times, and though less frequently occurring, some lenders may not report to all major CRCs. As a result, a consumer's credit file composition and consequently their score can be different at each CRC (Figure 4). For example, a review of file composition for one million consumers across the three CRCs showed that only 78 percent of consumers had a mainstream composition at all three CRCs simultaneously. Sixteen percent of consumers, approximately 26 million, had a mainstream composition at two CRCs simultaneously and 6 percent, approximately 10 million, had a mainstream composition at just one CRC.

File migration

Although it's a phenomenon with considerably smaller volume, consumers' credit use behaviors impact the composition of their credit file and, therefore, possible consideration for lending (Figure 5). Annually, an average of 5.1 million consumers expand their credit usage by opening accounts and using credit more intensely, and as a result, move from the Upsiders and Minimalist tiers to the Mainstream file composition tier. Conversely, an average 5.5 million consumers reduce their need and use of credit to drop out of the Mainstream tier. As a result, these consumers 'appear' and 'disappear' from the accessible universe.

Clearly there are a number of significant hurdles that must be passed in order to be considered credit-worthy. Figure 6 shows the potential cumulative impact of these hurdles. Under a worst-case scenario, the accessible universe may be reduced by as much as 43 percent based on these elements. And this is prior to any empirical analysis of consumer risk

based on their behaviors, i.e., the credit score value, has been applied.

Case Study

The following analysis of a mortgage originations strategy shows the impact of requiring qualitative file composition criteria, given the data and analytic processing environment. The analysis also demonstrates how to enhance the strategy to expand the universe of eligible consumers while reducing the risk profile of the originated portfolio.

The strategy below reflects a typical design for mortgage originations. For a consumer to be considered for credit:

- Their credit file (from at least one of the CRCs) must be Mainstream, i.e., have at least three trades with updates during the last 6 months.
- A credit score is obtained for every instance of a Mainstream credit file at the CRC.
    — If three credit scores are obtained, the median value score is selected as the consumer's score
    — If two scores are obtained, the lower score is selected
    — If just one score is obtained, this is used as the consumer's score
- Finally, a consumer is eligible if the score value is greater than 620.

How effective is the current strategy?

173 million consumers have at least one instance of a mainstream file composition at the CRCs. However, 54 million consumers are excluded from consideration given they do not have a Mainstream file composition at any of the CRCs (Figure 7). Of the 173 million consumers, 128 million exceed the score threshold criteria of 620.

A review of the default rate profiles (Figure 8) for these consumers shows that consumers with two or more credit scores have lower actual default rates across the credit score spectrum. These results suggest that the consistency of information, in this case, file composition, is representative of higher credit quality information.

Conversely, consumers with a mainstream file at just one CRC, and, therefore, a single credit score, demonstrate higher risk levels across the credit score range. At the threshold score cut-off value of 620, the default rate is as high as 13 percent. Under this current strategy, the organization is willing to accept a default rate as high as 13 percent in its originations business. Any expansion to the accessible universe must be achieved at or below this default rate.
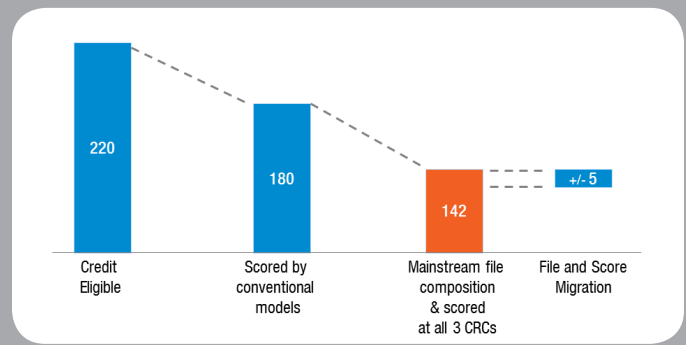

Figure 6: Credit accesible universe

Figure 7: Mainstream file composition

Mainstream	Percent of population	Accessible Universe (Millions)
All 3 bureaus	59.1%	135
2 bureaus	12.1%	28
1 bureau	4.7%	10
Total accessible universe		173
Ineligible		54

Figure 8: Default rate profiles by score assignment method
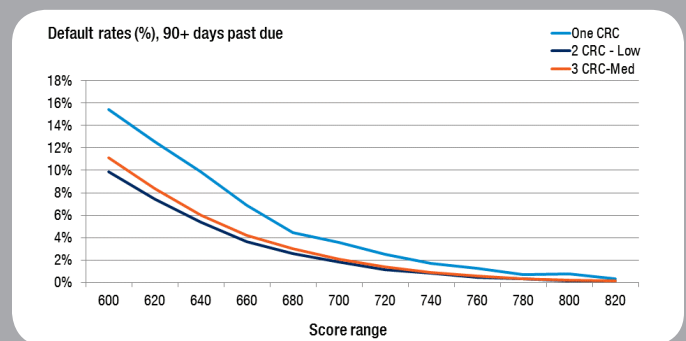
Figure 9: Universe expansion by removing file composition criteria

Consumer Score Coverage By CRCs

Legend: ■ Incumbent ■ Opportunity

	3 CRCs	2 CRCs	1 CRC	Not eligible
Incumbent	59%	12%	5%	24%
Opportunity	80%	13%	3%	3%
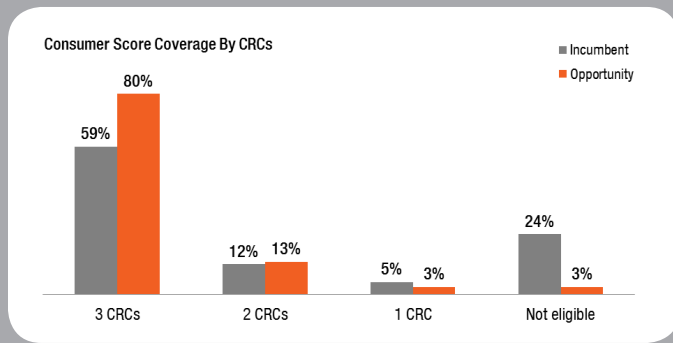
Exist at	Incumbent	Opportunity	Change in information coverage
3 CRCs	135	183	36%
2 CRCs	28	30	9%
1 CRC	11	7	-35%
Not eligible	55	7	-89%
Total (millions)	227		

Figure 10: Impact of the score selection criteria

Legend: ■ No Change ■ Alters Existing ■ New Opportunity

No Change	Alters Existing	New Opportunity
152	21	48
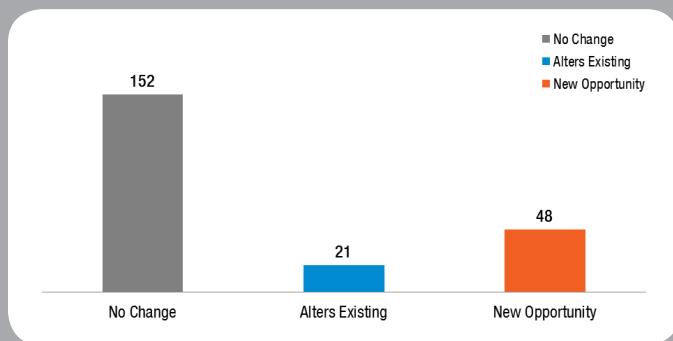
Figure 11: Final accessible universe for revised strategy

Legend: ■ No Change ■ Alters Existing ■ New Opportunity

	No Change	Alters Existing	New Opportunity
	0	-0.3	19
Final Accessible Universe (millions)	117	10	19
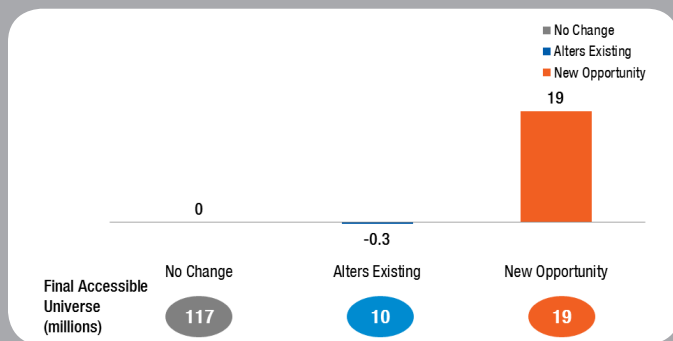
Figure 12: Default rate profile for revised strategy

90+ Days Past Due

Legend: Incumbent, Alters Existing, New opportunity

(Line chart: Y-axis 0% to 14%; X-axis Score range 600 to 820)
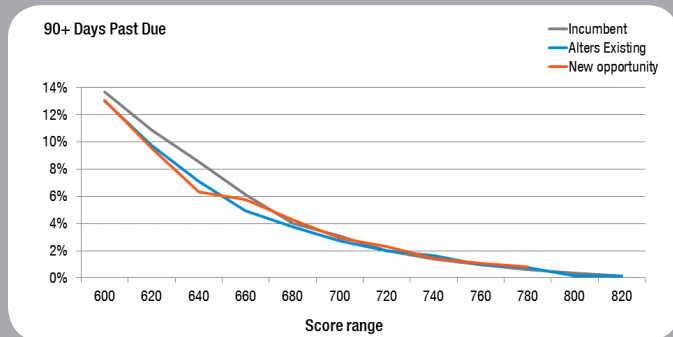
Universe and Risk Optimization

Removing the Mainstream composition criteria so that any consumer with a valid credit score is eligible will naturally expand the universe. Using VantageScore 3.0, the universe can be expanded by 27 percent or 47 million consumers (Figure 9).

The next logical question is whether this expanded universe contains consumers of sufficiently high credit quality. Applying the score selection criteria, results in a revised score for 21 million consumers. An increased number of scores are now available for these consumers. Applying the score assignment method of selecting the median if three scores are present or the lower if two scores are present, results in a lower selected final score and a more conservative risk assessment. 48 million consumers, who were previously ineligible given their credit file did not satisfy the mainstream file composition criteria, become new opportunities (Figure 10).

Finally, applying the score cut-off criteria that consumers must have a score greater than 620, results in a final accessible universe of 146 million consumers – a 14 percent expansion over the accessible universe identified under the incumbent strategy (Figure 11). Significantly, 19 million 'New Opportunity' consumers score at or above 620. Note also that the 'Alters Existing' population is slightly reduced by 300,000 consumers, given their revised score is now lower than the cut-off.

The final requirement of the revised strategy is that these consumers, with revised and new scores, perform at or below the default rate profile of the incumbent strategy. Figure 12 demonstrates that the default rate profiles for the revised (Alters Existing) and newly (New Opportunity) scored consumers are clearly at or below the incumbent performance, most significantly in the higher risk portion of the credit score range.

CONCLUSION

Strategy design elements such as file composition criteria clearly impact the accessible universe and do not necessarily reduce the risk exposure. Furthermore, scoring models that require sufficient file composition in order to score the consumer may further reduce the accessible universe, without reducing risk exposure. Conversely, leveraging the mathematical innovation in VantageScore 3.0 not only maximizes the lending universe, but it also does so without increasing risk exposure.

The VantageScore credit score models are sold and marketed only through individual licensing arrangements with the three major credit reporting companies (CRCs): Equifax, Experian and TransUnion. Lenders and other commercial entities interested in learning more about the VantageScore credit score models, including the VantageScore 3.0 credit score model, may contact one of the following CRCs listed for additional assistance:

EQUIFAX®

Call 1-888-202-4025

www.equifax.com/vantagescore

Experian

Call 1-888-414-4025

www.experian.com/consumer-information/
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