

OCTOBER 2017

# Trended Credit Data Attributes in VantageScore 4.0



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# Trended Credit Data Attributes in VantageScore 4.0

VantageScore Solutions introduces trended credit data with the release of its VantageScore 4.0 credit score model. In this document, you will find exactly what these new time-series attributes are composed of, what performance benefits users should expect as a result, and examples of the underlying consumer credit behaviors that were used to construct these attributes.

## SUMMARY

- Trended credit data are attributes that summarize a consumer's credit behavior over the past 24 months to help assess the trajectory of his/her credit health. Trended credit data augments a consumer's traditional static credit information in VantageScore 4.0, providing additional performance gains to the credit risk score.
- Most of the gains to predictive performance in VantageScore 4.0 arising from trended credit data occur within the Prime and Superprime credit tiers.
- VantageScore conducted rigorous testing of these new attributes to ascertain their consistency, availability, and amount of performance improvement to the VantageScore 4.0 model.
- Trended credit data attributes are constructed from the same data points traditionally used by the credit reporting companies, including: loan amount, credit limit, balance, minimum payment due, and scheduled payments.

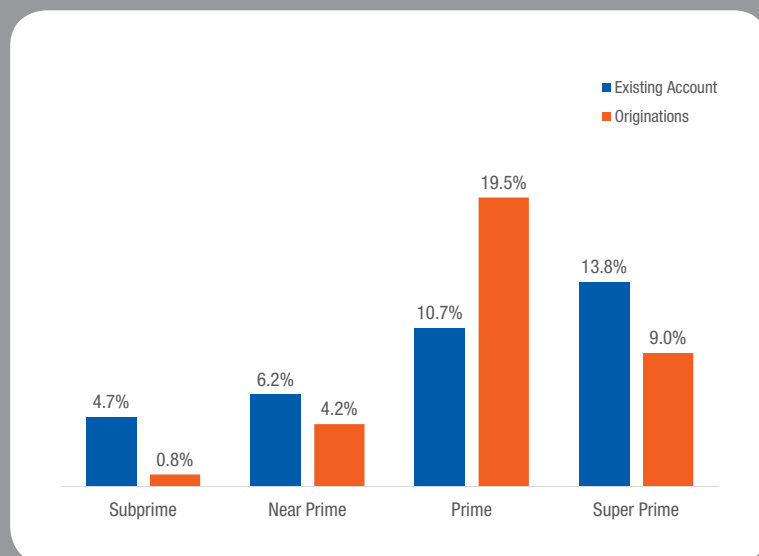
## WHAT IS TRENDED CREDIT DATA?

Trended credit data contributes to a credit score by helping to assess the trajectory of credit behaviors, measuring the magnitude and direction of a consumer's credit health in the last three to 24 months of time. These new attributes will supplement the static, one point-in-time information historically gathered in credit files, offering a more complete view of a consumer's credit behavior.

Trended credit data builds from the data fields that are already included in consumers' monthly credit files, and synthesizes the existing information to measure rates of change and aggregated insights. By revealing patterns in credit behaviors over time, such as the number of balance decreases or the increase in a borrower's utilization, these attributes are especially useful at improving the performance of the model for Prime and Superprime consumers, for both new originations and existing accounts (Figure 1).

Scorecards were designed and built for each credit tier. Each scorecard was built both with and without these trended data attributes and the predictive performance of each scorecard was then calculated using a Gini statistic. The incremental performance lift from the use of trended attributes is provided in Figure 1.

Figure 1: Percent Incremental GINI Lift Using Trended Credit Data Attributes



## EXAMPLES OF CONSUMER TRENDED CREDIT DATA ASSESSMENTS

The following examples are intended to show how the inclusion of trended data attributes can enhance consumer risk assessment:

### Credit Card Balances

Fifty-eight percent of Americans carry revolving credit card debt from month to month, which may be an indication of either healthy or risky credit balance trajectories. Consider the case of credit card balances where consumer A reduces his or her balance by \$5,400 over four months and consumer B increases by \$2,100 over the same period, but both have the same balance at the time their credit score was calculated (Figure 2). By looking only at the balance for the current month, the scores would be similarly impacted by those identical balances. However, when holding all other attributes constant, incorporating the trajectories for the two consumers reveals that consumer A represents a lower risk, and would receive a higher credit score.

### Credit Utilization

Over half of Prime and Superprime consumers have a utilization rate above 30%, the rate considered a benchmark for healthy credit usage. By using the new trended credit data, consumers are rewarded for a history of low utilization rates, rather than just relying on their current standing (Figure 3). Consider the following scenario where consumer A maintained an average utilization of 30% over 12 months versus consumer B's 38%. But, at the time of requesting the credit score, consumer A had a higher current utilization rate. The new attributes look beyond the momentary spike in utilization for consumer A by also taking into account the several months of A's prior healthy credit utilization behavior.

### Payment Agreements

Seventy-seven percent of Prime and Superprime consumers have no late payments on their open accounts, which could reflect a wide variety of healthy repayment behaviors. Using trended data, a consumer's history of repaying obligations can also be analyzed by tracking whether the payments of installment loans are over, under, or as agreed compared to the monthly payment schedule (Figure 4). Consider the case where consumers A and B have a history of under-paying, consumer C repays as agreed, and Consumer D always overpays. If everything else is held constant, Consumer D, with several "over payments," represents the lowest risk, and accordingly receives a higher credit score.

Figure 2: Credit Balance Trajectory

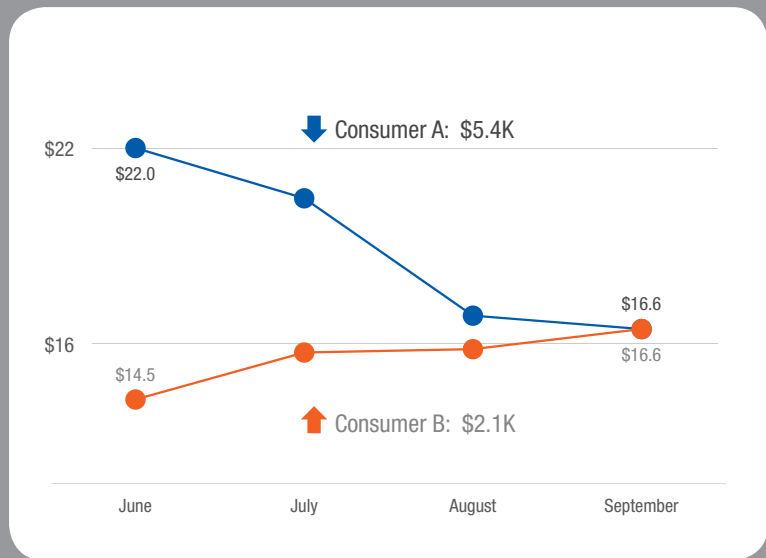


Figure 3: Average Monthly Revolving Credit Utilization

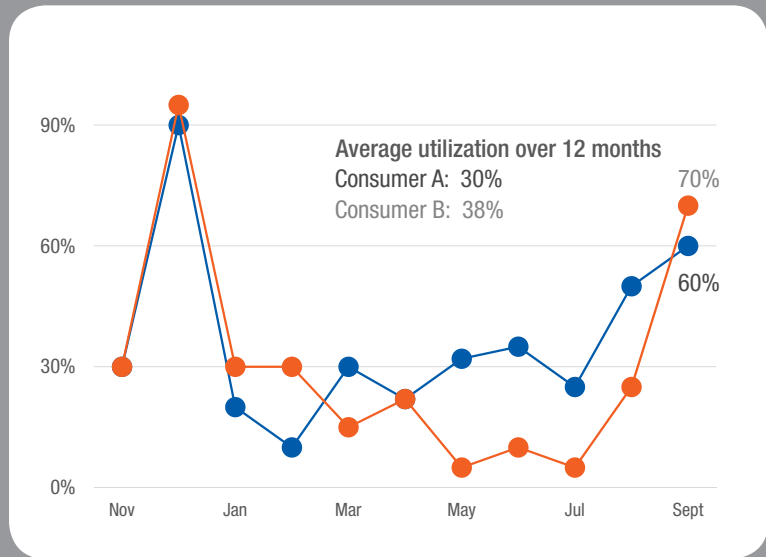
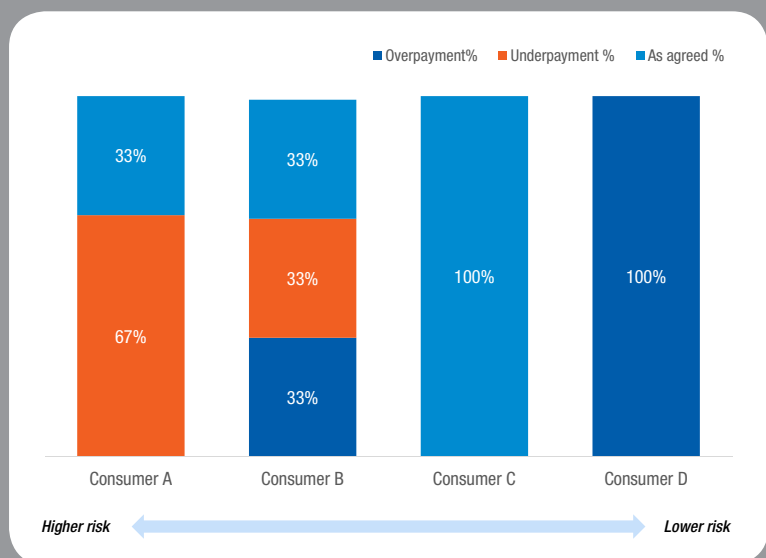


Figure 4: Percentage Over, Under, or as Agreed Payments over a Six-Month Window



## WHY USE TRENDED CREDIT DATA?

Trended credit data can provide up to a 20 percent improvement in predictive performance when it is used in combination with traditional static attributes (see Figure 1). Most of these gains in predictive performance occur with Prime and Superprime consumers, providing the ability to further reduce the risk presented by these low-risk populations. The performance gain represents an innovative way to acquire additional insight into the credit behaviors of consumers. Although these attributes are based on data residing in the same credit fields that have been provided by credit reporting companies for decades, they provide additional lift by analyzing credit behaviors at various points in time.

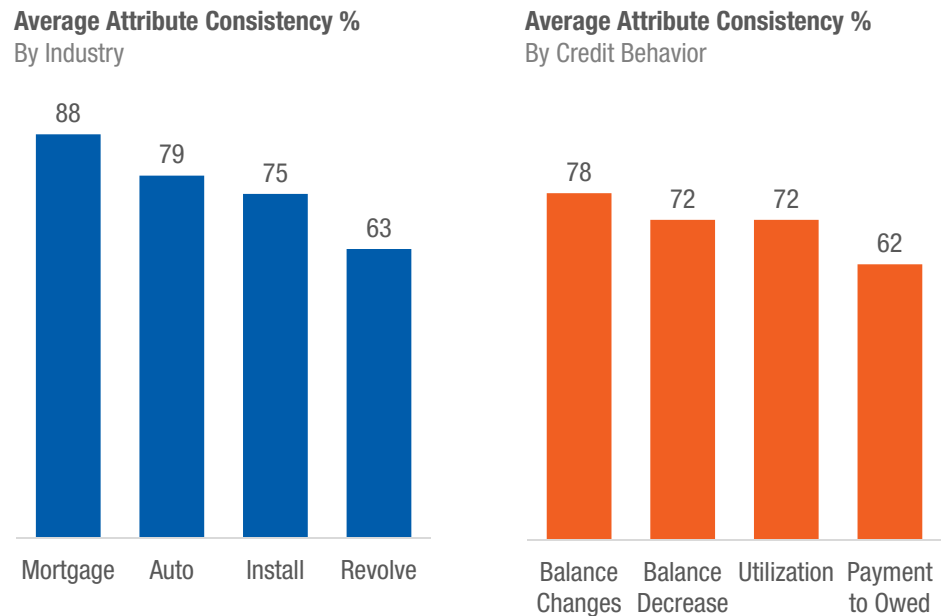
In addition to this cutting edge use to improve credit score performance, trended credit data is a market-tested method to underwrite loans used by Fannie Mae as a component in its mortgage underwriting process. All three CRC's (Experian, Equifax and TransUnion) also offer options for trended credit data analysis. These new uses of trended credit data are expected to bring benefits to both lenders and consumers by enhancing the accuracy of credit risk assessments.

## TRENDED CREDIT DATA ATTRIBUTE DESIGN & CONSISTENCY

VantageScore designed trended data attributes for a variety of industries, behaviors, and timeframes (Figure 5).

| Industry             | Behavior  | Timeframe |
|----------------------|---|-----------|
| First Mortgage       | Number credit limit increase/decrease                 | 3 months  |
| All Mortgage         | Number payments above amount due                      | 6 months  |
| Home Equity          | % change in balance                                   | 12 months |
| Installment          | Slop of balance, credit limit                         | 24 months |
| Personal Installment | Start-end % change in balance                         |           |
| Auto Loan            | Average excess payment in \$ or % to prior due amount |           |
| Student Loan         | Average monthly utilization                           |           |
| Bankcard             | Time since most recent over-limit                     |           |
| Revolving            | Number of times over-limit                            |           |
| Retail               | Highest monthly utilization                           |           |
|                      | Utilization on highest usage trade                    |           |
|                      | Average number of payment as % of balance             |           |
|                      | Number of blance decrease/increase                    |           |

**Figure 6 & 7: Average attribute consistency %, by industry and credit behavior**



### Attribute Consistency

VantageScore is uniquely positioned to maximize the value of the trended credit data used in VantageScore 4.0 because it is the only model that is identical at each CRC. Although each CRC has other fields unique to their respective trended data products, all of the trended credit data attributes in VantageScore 4.0 are consistent across the three CRC's because of VantageScore's levelling process (description of that process available here: <https://www.vantagescore.com/consistent>).

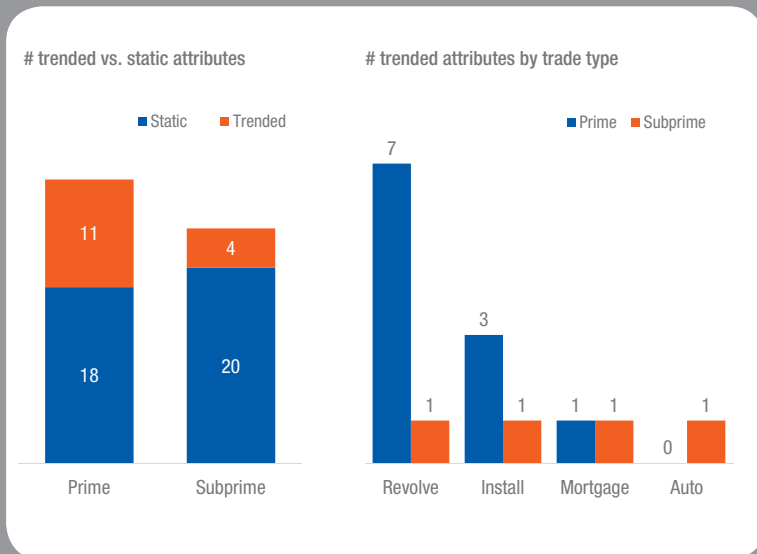
This consistency was born out of VantageScore's testing. Attributes and their values were calculated for a sample of consumers, anonymously selected at each CRC from across the U.S. population. Attribute values were then compared for consistency. The results demonstrated that consistency varied only slightly for individual attributes by industry (Figure 6) as well as by credit behavior (Figure 7). For

example, 88 percent of the mortgage-related attributes were identical and 78 percent of balance change-related attributes were identical.

Overall, trended credit data attributes were more heavily relied on when analyzing the Prime and Superprime credit tiers, categories in which there are less obvious high-risk behavior. The heavier reliance on trended data attributes in these tiers makes it possible to tease out "bads" in otherwise overwhelmingly "good" populations (Figure 8).

Eleven of the twenty-nine attributes in the prime scorecard in VantageScore 4.0 are generated from trended credit data, compared with just four of the twenty-four attributes in the subprime scorecard. Of the eleven trended attributes in the prime scorecard, seven are related to revolving behavior, three to installment loans, and one to mortgage.

**Figure 8: Trended Credit Data Attributes by Credit Tier Scorecard**



## SUMMARY

The use of trended credit data is just one example of how VantageScore Solutions is transparent about its credit scoring methodology, innovative in adopting new techniques, and unique in its ability to score consumers based on files from any of the credit reporting companies. We hope that this whitepaper explains several reasons why the analysis of trended credit data increases predictiveness so that institutions can confidently use it in their credit risk assessments. As credit scoring models attempt to squeeze more predictive power out of consumer credit files, innovative approaches like the analysis of trended credit data provide a trustworthy path to increasing the utility of credit scores

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 latest VantageScore 4.0 credit score model, may contact one of the following CRCs listed for additional assistance:



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