

# Credit Score Basics, Part 2: An Overview of Ways Lenders Use Credit Scores for Credit Approval

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## OVERVIEW

In the simplest of terms, lenders use credit scores in three primary areas of their businesses: 1) as part of the process for evaluating credit applications, 2) identifying potential new customers that meet their approval profiles, thereby creating a list of consumers to receive credit offers (often called account acquisition strategies), and 3) monitoring the relative health of credit management among current credit customers. The common bond between all three scenarios is the overarching business strategy employed by the lender. Some lenders choose to extend credit only to those with the best credit record. Other lenders may exclusively target so-called “subprime” consumers, while other lenders offer credit to the vast majority of consumers between those two extremes.

VantageScore Solutions, LLC has published a three-part series of white papers describing important, but less known attributes and applications of credit scores, aimed at closing knowledge gaps that exist among general users of credit scores. The first paper, *What’s Behind Credit Scores*, covers the relationship between consumer risk and credit scores. The third installment in the series, *Achieving the Same Risk Interpretation from Different Models with Different Ranges*, describes three methodologies to convert disparate score values from different ranges into the same risk assessment. This paper provides an elementary overview for how lenders might apply credit scores to their business strategies in deciding credit approvals.

Credit scores enable lenders to assess the likelihood that a consumer will default on a loan. Lenders may use a score as the sole assessment tool for determining consumer risk. For example, consumers with a credit score greater than 700 are approved for a loan while those with a score of less than 700 are declined. More typically, a lender will use additional criteria and analytics beyond the credit score during the underwriting process and to further segment a population of consumers who all have the same credit score. Leveraging additional data and analytics in conjunction with the credit score can provide greater transparency into the risk of each consumer. Examples of such data and analytics could be employment, income, debt to income ratio, loan to value ratio, presence of additional lender relationships, consumer asset base and so on.

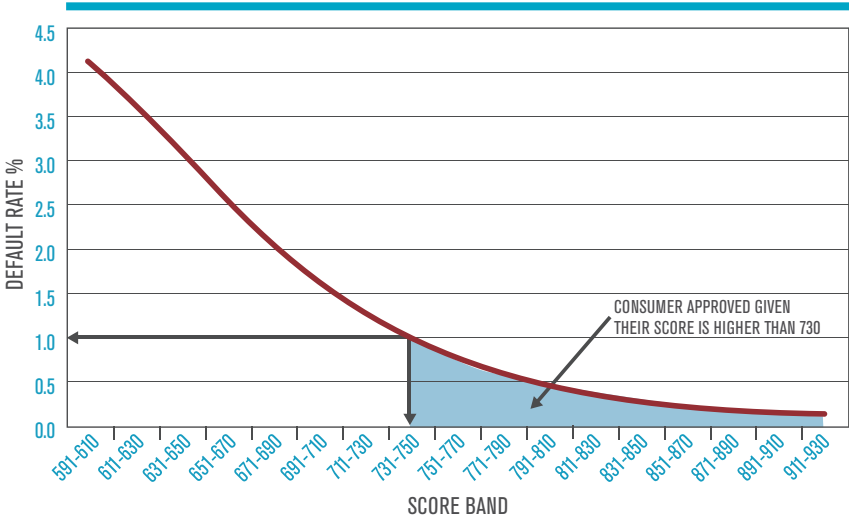
What follows are three simple examples demonstrating ways in which credit scores are used in lender risk strategies.

SUMMARY

- Typically, lenders use credit scores *in conjunction with* additional information related to the product and or lender-consumer relationship in order to gain sufficient risk segmentation insights.
  - » Examples of additional information include product profitability factors and internally developed scores, as well as consumer-specific information such as loan-to-value ratio, or debt-to-income ratio, to name a few.
- Armed with the insights, lenders can manage their portfolios according to their overall business goals and profitability targets.

SCENARIO 1:  
STRATEGY USING A  
SINGLE GENERIC  
CREDIT SCORE

FIGURE 1  
CUMULATIVE DEFAULT RATE BY SCORE BAND



	CUMULATIVE RATE	INTERVAL RATE
591-610	4.07%	21.50%
611-630	3.60%	17.11%
631-650	3.10%	13.63%
651-670	2.60%	10.90%
671-690	2.10%	8.24%
691-710	1.63%	5.99%
711-730	1.25%	4.27%
731-750	0.98%	3.21%
751-770	0.73%	2.22%
771-790	0.57%	1.67%
791-810	0.45%	1.15%
811-830	0.35%	0.80%
831-850	0.28%	0.49%
851-870	0.24%	0.38%
871-890	0.19%	0.24%
891-910	0.17%	0.19%
911-930	0.16%	0.19%

**SCENARIO 1:  
STRATEGY USING A  
SINGLE GENERIC  
CREDIT SCORE**  
(Cont.)

Figure 1 above reflects a simple application of credit score use in a risk strategy. In the example, consumers with scores higher than 730 have a cumulative default rate lower than 1% and therefore represent an acceptable level of risk to the lender. This aligns with an individual default rate tolerance of 3.2% or less for the individual consumer. (The full VantageScore® range is 501-990). These consumers are approved for a credit offer. Conversely, consumers with scores lower than 730 represent a default level greater than 1% and are unacceptable to the lender. These consumers are declined for a credit offer.

Used in this way, credit scores offer a high level approach for segmenting a population of consumers based on a single risk dimension. However, lenders often require greater granularity and precision in determining risk segments. Consequently, lenders will apply additional information typically related to the credit offer or to specific aspects of the consumer-lender relationship. Using this additional information in conjunction with a credit score improves the lender’s risk management capacity. Scenarios 2 and 3 below provide examples.

**SCENARIO 2:  
DEVELOPING A  
HOME EQUITY  
LOAN STRATEGY  
USING CREDIT  
SCORE AND LOAN  
SIZE**

This hypothetical example illustrates how a lender might develop a risk management strategy for its home equity loan portfolio based on two inputs: consumer credit score and loan size.

Consumers within the lender’s existing home equity portfolio are assigned to a cell in a matrix based on their credit score and the size of their home equity loan. (See Figure 2) The number of consumers that have defaulted on their home equity loan is recorded as a percent of the total number of consumers in the cell. For example, 77% of consumers with a score between 501 and 520 and who had a home equity loan of \$50,000 or less defaulted on the loan. These default rates are used as proxies for future default rates. As expected, lower scores reflect higher default rates. Also, higher loan amounts within each score tier reflect higher default rates. The matrix is shaded simply to show ranges of default levels. Default rates higher than 37% are shaded in dark red, defaults lower than 3% are shaded in dark green, etc.

HOW DO SCORE DESIGNERS PICK THE SCORE RANGE?

FIGURE 2

VS V2.0	LOAN SIZE						
	UP TO \$50K	\$50-\$100K	\$100-\$150K	\$150K-\$200K	\$200-\$250K	\$250-\$300K	\$300-\$350K
501 to 520	77.0%	83.0%	86.9%	87.6%	88.3%	90.5%	89.8%
521 to 540	71.8%	77.6%	81.3%	85.2%	85.3%	84.2%	84.9%
541 to 560	66.1%	73.6%	77.7%	79.9%	82.7%	83.5%	82.1%
561 to 580	61.8%	68.9%	72.2%	76.8%	79.5%	80.6%	81.8%
581 to 600	55.3%	61.9%	66.0%	69.2%	73.4%	74.4%	76.8%
601 to 620	47.7%	53.5%	57.5%	61.0%	64.2%	66.0%	69.6%
621 to 640	40.8%	45.0%	49.6%	53.6%	57.0%	59.4%	61.8%
641 to 660	34.9%	38.6%	41.8%	45.2%	50.0%	53.1%	55.3%
661 to 680	28.6%	30.9%	34.1%	37.5%	42.0%	44.8%	46.2%
681 to 700	22.2%	24.0%	27.1%	30.2%	34.8%	37.4%	38.4%
701 to 720	16.8%	17.8%	20.7%	24.1%	27.3%	30.1%	32.4%
721 to 740	12.5%	13.6%	15.3%	19.2%	22.0%	24.3%	25.8%
741 to 760	9.4%	9.8%	11.7%	14.0%	16.5%	19.0%	19.0%
761 to 780	6.7%	7.8%	8.8%	10.4%	12.3%	14.3%	14.7%
<b>781 to 800</b>	<b>5.3%</b>	<b>5.8%</b>	7.3%	8.8%	10.5%	10.7%	12.8%
801 to 820	4.1%	4.3%	6.0%	6.5%	8.2%	8.9%	9.5%
821 to 840	2.7%	3.0%	4.1%	4.7%	5.7%	6.0%	7.3%
<b>841 to 860</b>	1.9%	1.9%	<b>3.1%</b>	<b>3.3%</b>	4.3%	4.8%	5.3%
861 to 880	1.2%	1.3%	1.7%	2.5%	3.8%	3.3%	3.7%
<b>881 to 900</b>	0.9%	0.9%	1.2%	1.5%	<b>2.3%</b>	<b>2.6%</b>	<b>2.7%</b>
901 to 920	0.6%	0.7%	0.9%	1.2%	1.7%	1.8%	2.0%
921 to 940	0.4%	0.5%	0.7%	0.8%	1.3%	1.5%	1.9%
941 to 960	0.4%	0.5%	0.7%	0.9%	1.3%	1.5%	1.9%
961 to 980	0.5%	0.4%	0.6%	1.1%	1.4%	1.4%	1.3%
981 to 990	0.4%	0.4%	0.5%	0.7%	0.8%	1.2%	1.0%

Analysts may use a similar matrix to develop a targeting strategy to identify consumer populations and loan size offers that meet their institutions’ P&L goals. A sample risk and P&L profile could set maximum allowable loss rates as follows:

- No more than 3% for loans greater than \$200,000
- No more than 4% for loans between \$100,000 and \$200,000
- No more than 6% for loans up to \$100,000

Working within those maximums, a strategy using credit scores and loan size might be expressed in the following manner:

- Consumers with a VantageScore of 881 or higher (B+/A quality consumers) are eligible for a loan up to \$350,000
- Consumers with a VantageScore between 841 to 880 (B quality consumers) are eligible for a loan up to \$200,000
- Consumers with a VantageScore between 780 and 840 (C+/B- quality consumers) are eligible for a loan up to \$100,000

## SCENARIO 3: DEVELOPING A STRATEGY USING A GENERIC RISK SCORE IN CONJUNCTION WITH AN INTERNAL RISK MODEL

Many lenders have their own internally developed model that often captures more information regarding the consumer's relationship with the specific lender. Constructing a similar default rate matrix using two models (VantageScore with a range of 501 to 990 and a hypothetical internal model with a range of 50 to 200) appears in Figure 3.

FIGURE 3

VS V2.0	INTERVAL SCORE														
	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
501 to 520	77%	74%	71%	68%	63%	61%	49%	58%	50%	33%					
521 to 540	74%	71%	68%	66%	61%	59%	50%	48%	49%	38%					
541 to 560	71%	69%	66%	62%	59%	56%	54%	48%	43%	42%	64%	33%			
561 to 580	68%	66%	64%	61%	57%	53%	52%	52%	47%	47%	56%	46%	33%		
581 to 600	64%	62%	60%	57%	53%	49%	46%	44%	42%	44%	41%	46%	43%	80%	100%
601 to 620	59%	58%	55%	52%	48%	45%	41%	40%	38%	31%	32%	42%	53%	54%	63%
621 to 640	54%	53%	51%	48%	45%	41%	37%	34%	32%	34%	35%	38%	39%	51%	43%
641 to 660	53%	48%	47%	44%	40%	37%	34%	31%	29%	28%	29%	33%	37%	35%	35%
661 to 680	50%	48%	42%	41%	36%	33%	30%	28%	26%	25%	25%	26%	29%	27%	27%
681 to 700	45%	42%	41%	35%	33%	29%	25%	23%	21%	20%	20%	21%	23%	24%	23%
701 to 720	50%	37%	35%	32%	28%	25%	22%	21%	17%	16%	16%	17%	18%	18%	18%
721 to 740	36%	34%	30%	30%	27%	21%	20%	16%	14%	13%	13%	13%	14%	15%	14%
741 to 760		75%	40%	29%	26%	21%	19%	16%	14%	13%	10%	9%	9%	9%	10%
761 to 780		0%	0%	40%	23%	20%	18%	14%	12%	10%	9%	8%	7%	7%	6%
781 to 800		0%	50%	30%	21%	20%	18%	14%	10%	9%	8%	6%	6%	5%	5%
801 to 820			45%	20%	25%	23%	19%	8%	11%	8%	7%	6%	5%	4%	4%
821 to 840			39%	14%	17%	17%	13%	15%	6%	8%	7%	5%	4%	4%	3%
841 to 860					12%	8%	10%	13%	12%	9%	7%	5%	4%	3%	2%
861 to 880						0%	5%	11%	10%	8%	5%	4%	3%	2%	2%
881 to 900							0%	10%	14%	8%	4%	4%	2%	2%	1%
901 to 920							0%	5%	10%	11%	7%	5%	3%	2%	1%
921 to 940							0%	0%	0%	4%	4%	3%	3%	2%	1%
941 to 960							0%		0%	0%	6%	6%	3%	2%	2%
961 to 980								0%	15%	0%	2%	4%	2%	3%	1%
981 to 990							0%	0%	0%	8%	12%	3%	3%	2%	2%

If the lender had previously set a maximum allowable loss rate of 16%, analysts can identify the population that satisfies this constraint by selecting the following consumers:

- VantageScore between 721 and 820 and internal score greater than 120
- VantageScore greater than 821 and internal score greater than 110
  - » Note all of the cells identified by these parameters have default rates of 16% or lower.

## CONCLUSION

Credit score models provide an assessment of consumer risk. More often than not, lenders use this assessment to reflect risk in strategies that frequently incorporate other relevant information, such as economic factors. It is the combination of these data elements that determines whether a consumer is approved for credit.