Understanding the Small Business Risk Insight (SBRI) SBRI Portfolio Management Score

This document is intended to address the following questions:

- What is the SBRI Portfolio Management Score?
- What is new about the SBRI PM Score?
- What does the SBRI PM Score predict?
- How is the SBRI PM Score calculated?
- What is the availability of the SBRI PM Score?
- What are the deliverables with the SBRI PM Score?
- How do I get access to the SBRI PM Score?
- How can I use the SBRI PM Score?

I. WHAT IS SMALL BUSINESS RISK INSIGHT?

Small Business Risk Insight (SBRI) is Dun & Bradstreet's financial industry shared data repository of small business payment performance information on loans, lines, credit cards and leases. At the end of 2008, the SBRI database contained payment history and current standing on over 39 million accounts representing 9.5 million unique businesses. This data provides participating financial institutions with revealing, account level and highly predictive lending performance data about their existing and prospective small business customers. SBRI leverages Dun & Bradstreet's DUNSRight™ Quality Process to ensure that each small business decision can be more accurate and precise.

SBRI data delivers a more complete view of a customer. By enabling access to financial services performance data such as the number of leases, loans, lines and cards, SBRI offers a previously hidden part of the complete financial picture.

Access to the SBRI database, attributes, and scores is limited to SBRI participants: Financial services customers who contribute financial payment data. However, with permission from the SBRI participants, SBRI access has also opened up to Non-Financial Services customers who contribute open-account payment data to Dun & Bradstreet's Trade Tape program.

A growing list of leading institutions has turned to Dun & Bradstreet to leverage the benefits of data sharing by participating in SBRI. SBRI began by offering participating institutions a means to share and access a new, independent and highly predictive source of lending performance data about small business customers.

SBRI participants have minimal data requirements in order to generate a score on a credit application or given set of accounts. They must supply basic business information about the small business; including business name, and address, and D-U-N-S® Number, if available. A SBRI Origination Score will be generated for all D-U-N-S Numbered businesses, not just for those that match in the SBRI database. However, if there is no archived information or supporting input data, then no score can be generated. This can occur during a retro-score analysis, when the D-U-N-S Number did not exist as of the archive period.

II. WHAT ARE THE SBRI ORIGINATION SCORES?

The SBRI Portfolio Management Score is a predictive score you can use to sharpen your account management strategies. Based on the powerful financial performance data in our Small Business Risk Insight (SBRI) database, the SBRI PM Score offers an unprecedented financial performance measure of delinquency on small business credit applicants and accounts.

The Dun & Bradstreet team created a suite of SBRI predictive models that leverages the rich source of lending performance data found in the SBRI database as well as the Dun & Bradstreet Data Cloud. SBRI data delivers a more complete view of a customer. By enabling access to financial services performance data such as the number of leases, loans, lines and cards, SBRI offers a previously hidden part of the complete financial picture.

The SBRI Portfolio Management Score offers:

- More precise decisioning across the customer lifecycle on account management
- Greater visibility into how your customers represent themselves and are leveraged with other lenders so you can have a true picture of their total risk and opportunity
- Easier and faster assessment of the payment performance of your customers across multiple lenders and financial types
- Deeper insight into how your customers are likely to pay in the coming months so you can proactively manage your offers, collections and cash flow

III. WHAT IS NEW ABOUT THE SBRI PORTFOLIO MANAGEMENT SCORE?

Overall, the new SBRI PM models generated greater than 25% predictive lift over existing models by using:

- A more serious level of delinquency when identifying bads in the development dataset – those that reached a level of 4-cycles delinquent or greater, which in turn produced more discriminate models
- Enhanced segmentations with 8 models in the suite, compared to 6 in the prior version

IV. WHAT DOES THE SBRI PM SCORE PREDICT?

The SBRI PM Score is a suite of predictive models(8) that offer a quantifiable assessment of the risk associated with a small business lending account, predicting severe delinquency (more than 90 days) including charge-offs over the next 12 months. Based on past payment performance with other financial institutions, and Dun & Bradstreet's firmagraphic, trade and public record data, the SBRI PM Score provides insight into how a small business is likely to pay its credit obligations to financial institutions. While the SBRI PM Score is not expressedly built to predict business failure, the library of characteristics used to develop the SBRI PM Score contains the majority of the underlying elements used in the development of our Financial Stress Score, which predicts business deterioration and failure.

Because small businesses tend to treat their trade credit differently from their accounts granted by a financial institution, these scores were developed specifically to be used by financial institutions. However, non-financial services customers can use SBRI scores, in conjunction with CCS scores, to have a more complete view of their customers' payment behavior.

V. HOW IS THE SBRI PM SCORE CALCULATED?

The team of statistical analysts and modelers that developed the SBRI suite of models leveraged their expertise in small business predictive modeling, using proprietary methodologies. The SBRI models are designed and have been validated according to the following parameters:

- A large and robust sample of small businesses from the SBRI data repository.
- Sample accounts aged in the SBRI database for 3 or more years from January 2005 to March 2008. The performance of these accounts in the time window by multiple vintage was used for the model development process.
- Bad observations, or "Bads" are defined as a small business with any account that went multiple three cycles, or four cycles past due or worse, including charge-offs, during the performance window.
- Good observations, or "Goods" are defined as any small business that was not more than twice two cycle past due.

Model development involves selecting data available at the time of observation that will indicate how the account is expected to perform over a certain period of time. For the SBRI model development, two snapshots of credit history were used from two different points in time from a sample of the small businesses in the SBRI data repository.

The first data snapshot (called the observation snapshot) simulates the time of scoring and is used to generate the predictive variables and segmentation schemes.

The second data snapshot (called the performance snapshot) is used to determine the payment performance of each small business during the performance window. For the SBRI Score development, the observation snapshot captured small businesses in the SBRI database as of January 2005, January 2006, November 2006, and March 2007, whereas the performance window was 12 months forward by each observation snapshot.

From the observation snapshot data, the Dun & Bradstreet analytical team studied about 300 variables in the SBRI database for potential segmentation and model variables. Predictive variables from the Data Cloud were also generated. The final suite of SBRI PM models use 70 predictive variables from the SBRI and the Dun & Bradstreet commercial databases. This set of variables includes:

SBRI Data Predictive Variables:

- Months since most recent delinquency
- Balance of open account
- Number of inquiries last 6 months (excluding the last 7 days)
- Number of satisfactory accounts
- Number of accounts 1 cycle or worse delinquent
- Months since oldest date opened

Dun & Bradstreet **Commercial Data Predictive Variables:**

- Time as current owner
- Amount of liens, suits and/or judgments
- Percent satisfactory payment experiences
- Demographic characteristics

The SBRI PM Score calculated on a small business is generated from one of eight models contained in the SBRI Scoring Model Suite. Having a suite of models allows for better separation of 'goods' and 'bads' by focusing on unique populations. For the SBRI Score development, over 20 different segmentation schemes were explored. The final segmentation scheme used for the SBRI Score examines the type of information available about the small business obligor. The model with the most predictive value is automatically selected for a given business depending upon the available data as follows:

- The type of credit account being evaluated (i.e., lease, credit card, term loan or line of credit)
- Available information about the small business in the SBRI and/or Commercial database(s)(i.e. Presence of SBRI data)
- The number of trade lines available in the SBRI database(i.e. Thick vs. Thin)
- Prior delinquencies in the trade line detail(i.e. Clean vs. Dirty)

VI. WHAT IS THE AVAILABILITY OF THE SBRI PM SCORES?

SBRI participants have minimal data requirements in order to generate a score on a given set of accounts. You must supply basic business information about the small business; including business name, and address, and D-U-N-S Number, if available. An SBRI PM Score is generated for all D-U-N-S Numbered businesses, not just for those that match in the SBRI database, with one exception – businesses with a "High Risk" flag will receive a SBRI PM Score = 0. However, if there is no archived information or supporting input data, then no score can be generated. This can occur during a retro-score analysis, when the D-U-N-S Number did not exist as of the archive period. In this rare event, an exclusion code will be returned indicating why the record could not be scored.

VII. WHAT ARE THE DELIVERABLES WITH THE SBRI PM SCORE?

Once the optimal model has been selected from the suite of models based on available information about the small business, the SBRI PM Score is generated and delivered to you with a batch deliverable with the additional indicators:

- The numeric identifier for the model that was used to generate the SBRI PM Score.
- Three score reason codes are generated and returned. The reason codes help you understand why the small business did not score the maximum points allowed by the selected model. Each reason code is generated based on the independent model variable which scored furthest from the maximum points for that given variable. The reason codes are delivered in order from the greatest to the least score difference. For example, the first reason code will show you the variable that fell furthest from the mark.
- Over 275 attributes can also be returned depending on your choice of two layouts:
    - SBRI PM Score and All 275+ attributes
    - SBRI PM Score and a combination of the "key" attributes along with credit product specific attributes (i.e., credit card, lease, term loan, or line of credit)

Appendix contains the list of reason codes.

For more information about SBRI Participation, contact your Dun & Bradstreet Relationship Manager.

VIII. HOW DO I GET ACCESS TO THE SBRI PM SCORE?

SBRI participants can easily access the SBRI PM Score via a batch deliverable on a monthly, quarterly basis or single basis.

IX. HOW CAN I USE THE SBRI PM SCORES?

The SBRI Score can be used in your account management strategies and it facilitates more efficient and complete decisioning across the customer lifecycle. The SBRI Score offers a competitive advantage because more robust and accurate decisions can be made by combining the SBRI Score with consumer credit bureau scores on the principal owners of a business.

Now more informed decisions can be made when a more complete or "360 degree view" of the small business customer is achieved. With these proven analytics, you can evaluate the broadest range of data with this combination of resources – commercial data, financial services data, trade credit data, public records, and consumer data on the business owners.

The SBRI Score incorporates predictive data not previously available to existing portfolio management processes thereby adding invaluable insight into the process. Combining this invaluable insight with other predictive techniques strengthens your account management strategy. Implementing sophisticated decision rule overlays that include the SBRI PM Score will provide additional depth to your decisioning capabilities and incorporating the SBRI Score into your account management strategy will allow you to optimize your portfolio's profitability.

The charts below illustrate how the SBRI Portfolio Management Score development population is distributed as a function of score and the probability of repayment in each score range.

SBRI Score Odds Chart & Population Distribution For Development Sample

SBRI_PM Score Development Sample (950K businesses) Scaled Good/Bad Odds and Bad Rate 61+ Performance Definition - Any Financial Trade				
SCORE RANGE	INTERVAL %	CUMULATIVE %	GOOD/BAD ODDS	BAD RATE
Below 740	0.04%	0.04%	0.50	66.86%
740-759	0.11%	0.15%	0.70	58.86%
760-779	0.36%	0.51%	1.38	41.95%
780-799	0.89%	1.41%	3.06	24.65%
800-819	2.13%	3.54%	6.13	14.03%
820-839	5.09%	8.62%	11.94	7.73%
840-859	11.57%	20.19%	24.30	3.95%
860-879	16.90%	37.09%	49.00	2.00%
880-899	19.21%	56.30%	98.70	1.00%
Above 900	43.70%	100.00%	266.38	0.37%

The SBRI PM Score enhances portfolio profitability when used effectively throughout the customer lifecycle. You will:

- Apply more tactical portfolio management actions to mitigate risk
- Be able to more closely monitor rising risk through real-time alerts
- Reduce the costs associated with full-scale annual risk reviews
- More accurately manage credit limits and card authorizations
- Increase customer satisfaction with faster, more consistent decisions
- Manage collection resources with prioritized actions for delinquent accounts
- Illustrate regulatory compliance with timely, consistent and objective review decisions

Appendix A

SBRI PM Score Reason Codes & Caution Indicators

S1 Insufficient trade account information
S2 Insufficient revolving trade account information
S3 Insufficient installment trade account information
SA Amount owed on revolving accounts
SB Number of inquiries last 6 months
SC Proportion of revolving account balances to revolving limits
SD Proportion of Installment balances to Installment
SE Delinquent past or present credit obligation(s)
SF Length of time trade lines have been established
SG Recency of delinquencies
SK Number of accounts past due in relation to total
SL Amount past due on accounts
SM Amount owed on revolving and installment account
SN Amount owed on installment accounts
SO Total revolving credit lines and installment accts
SP Proportion of amount past due on accounts
SQ Number of revolving accounts
SR Number of revolving accounts closed satisfactorily
SS Number of lease accounts closed satisfactorily
ST Recency of Accounts written off
SU Proportion of Lease Accounts written off
SV Total revolving credit lines
SW Proportion of Loan balances Loan amounts
T3 Proportion of past due balances to total balance
T4 Presence of Public Record items
T5 Number of accounts opened in the past 12 months
T6 Proportion of negative payment experiences
T7 Proportion of satisfactory payment experiences
T8 Dollar amount of suits, liens and judgments
T9 Number of UCC filings
TA Industry classification
TD Number of judgments
TE Number of liens
TF Number of negative payment experiences
TG Proportion of payment experiences rated less than satisfactory
TH Number of satisfactory payment experiences
TI Number of suits
TK Length of time in business under present management
TL Length of time in business
TM Presence of Business or Management History
TN Fair or Unbalanced financial condition
TO Sales Volume
TP Number of employees relative to trade lines
TQ Amount past due
TR Amount of negative payments
TS Amount of satisfactory payments
TT Amount of total payments
TU Dollar amount of liens and judgments
TV Proportion of current balances to amounts
TW Number of slow payment experiences
TX Number of payment experiences with net terms
TY Number of payment references
TZ Proportion of slow payment experiences to total
W1 Insufficient payment information
W2 Legal structure
W3 Number of inquiries last 12 months
W4 Amount of slow payments
W5 Amount of payments not rated as satisfactory
W6 Invalid telephone number
W7 Presence of financial statement
W8 Amount of cash payments
W9 Presence of UCC filings

Batch model population includes:

- Open Bankruptcy
- Self Requested DSR – business that have been self reported to D&B with no investigation
- Higher Risk – business that display characteristics of higher risk, either intentionally as in an overbuy or due to other business factors.
- Debtor in possession (dbt_ind = 1)

FLAG	DESCRIPTION	SCORE GENERATED?
1	Out of business	YES
2	Open bankruptcy	YES
3	Self Requested D-U-N-S	YES
4	High Risk	ZERO
5	On STOP Distirbution due to investigation	NULL
6	Data is too old (last updated prior to 1982)	YES
7	Undeliverable address	YES
8	Brand record	YES
9	No data available	NULL
10	Business deterioration within the past 90 days	YES