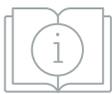




**EQUIFAX**<sup>®</sup>



User Guide

# Commercial Delinquency Score

CDS v2.1

February 2021

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# What is Commercial Delinquency Score?

EFX Commercial Delinquency Score helps predict the likelihood of a company NOT paying its non-financial trade accounts in a timely manner in the next 12 months period.

It uses advanced statistical models to predict and calibrates the probabilities into a score range of 101-600. The model is built by leveraging EFX's vast database containing information on more than three million Canadian businesses including firmographics, public records, inquiries, industrial and small business banking trade data.

## How is the Commercial Delinquency Score Model built?

Commercial Delinquency Score is composed of 6 models corresponding to 6 segments

- No Commercial Trades - Prior Delinquency
- Commercial Trades Only - Prior Delinquency
- Both Commercial and Financial Trades - Prior Delinquency
- No Commercial Trades - No Prior Delinquency
- Commercial Trades Only - No Prior Delinquency
- Both Commercial and Financial Trades - No Prior delinquency

The 3 models corresponding to Prior Delinquency are Decision Tree based Models. Decision Tree Models group the data into distinct number of score points which rank order based on bad rates. As a result you will see that the scores for the 3 segments will be grouped at those specific points corresponding to each model. The reason for choosing a Decision Tree based approach rather than the Logistic regression was to provide higher lift in performance.

The three models corresponding to No Prior Delinquency is a typical Logistic Regression. Logistic Regression creates a continuous score output which rank order based on bad rates.

# Availability of the Commercial Delinquency Score

The Commercial Delinquency Score (CDS2) 'scoreable' rate is ~98%. Commercial Delinquency Scores are not available on businesses that fall into the following categories:

- No Hit (CDS = 0)

Business branch locations will be scored based on the information of the headquarter location. Companies with no trade data available will be scored based on public records, firmographics and other data attributes.

The CDS2 score is available online via a system-to-system (STS) link as an ancillary product to the Canadian Business Credit Report in Full File Fixed (FFF), XML formats.

See Appendix A for a list of all reject and reason codes.

## What Does the Commercial Delinquency Score Predict?

The Commercial Delinquency Score version 2.0 models utilize vast amounts of data in the Equifax commercial database and leverage the relationship between the data elements to map the probability of a company experiencing severe delinquency over a period of 12 months.

Equifax defines a severely delinquent company as one that fails to repay its financial obligation within 90 days past terms, over the next 12 months.

As previously mentioned, the Commercial Delinquency Scoring version 2.0 model assigns a scale of risk from 101 to 600, where a 101 represents businesses that have the highest probability of severe delinquency, and a 600 which represents businesses with the lowest probability of severe delinquency. This number provides a direct relationship between the score and the level of risk. The marginal odds of being good doubles for each 30 point increase. For example, a business that scores a 230, on a marginal basis, is half as risky as a business that scores a 200. This score enables a customer to utilize granular cutoffs to drive their automated decision-making process.

Two of the segments No Industrial Trades - No Prior delinquency and No Industrial Trades - Prior Delinquency are to be treated as adjudication scores. Since these accounts have no prior industrial trades to evaluate, these scores are built with the idea of predicting their probability of delinquency IF they are to open an Industrial trade within the next 3 months.

Refer to Appendix B for a complete list of the CDS2 performance projection.

# How is the Commercial Delinquency Score Calculated?

The redeveloped Commercial Delinquency Score model was developed using state-of-the-art statistical and modeling techniques to select and weight the data elements that are most predictive of severe delinquency. The resulting Commercial Delinquency Score model is a mathematical equation that consists of a series of variables and coefficients (weights) that have been calculated for each variable.

The selection of the variables and the calculation of corresponding weights for each model are the result of extensive data analysis. In developing the models, Equifax evaluated a combination of “good” and “bad” performing businesses in the Equifax commercial database.

Data is collected from two time periods we designate as an observation window and a performance window. The observation window defines the sample used in the model and all identification and characteristic data are collected from this time period. The performance window defines the length of time the accounts are tracked to examine their payment behavior.

Equifax analyzed this information and identified the data elements, which are statistically the most significant factors for predicting severe delinquency. Only Equifax, with its access to a vast database of more than two million Canadian businesses, is uniquely qualified to demonstrate this impact.

Sample data elements used in the model include:

- Small business banking trade payment performance
- Industry trade payment performance
- Public record data (suits, liens, or judgments)
- Inquiry data
- Firmographic data

# What is the CDS2 Risk Class and how is it Calculated?

In order to provide customers with high level indication of the credit risk level using a delinquency probability, Equifax introduced the CDS2 Risk Class which aggregates the CDS2 raw score (from 101 to 600) into five classes (5 to 1). This makes it easier for the more risk tolerant companies to make informed credit adjudication decisions based on demographic, legal and credit information that they get on their clients.

Like the CDS2, the CDS2 Risk Class predicts the likelihood that a company will pay its bills in a severely delinquent manner within the next 12 months. A severely delinquent firm is defined as a business with its payments 90 days or more past due. This score aggregate however does not replace the need for the more granular CDS2 score, which is designed for the more risk sensitive customers who need to define stricter decision trees and need to comply with stricter, acceptable risk standards.

The CDS2 Risk Class is available in the Canadian business credit report. This is to provide customers with increased value to allow them to make better informed credit adjudication decisions.

For a more detailed analysis and interpretation of the CDS2 Risk Class, please refer to Appendix C.

# Appendix A

## Reason, Reject and Segment Codes

### Reason Codes

Reason Code	Description
40	Presence of Balance over Limit
41	Derogatory Public Records on File History
42	Collection Records on File History
43	Age of the Most Recent Trade Reported (Non-Financial)
44	Number of Trade Lines Recently Reported
45	Delinquent Trades on File History
46	Balance of Trades on File History
47	Delinquent Balance Amount on File History
48	Liens Records on File History
49	Number of Credit Inquiries
50	Credit File Age
51	Credit Information Score
52	Credit Utilization
53	Age of the Most Recent Credit Inquiry

### Reject Codes

Reject Code	Description
01	Public Administration Company
09	Subject is an Individual
10	All Information for this Company on All Products is Suppressed
11	Credit Reports for this Company are Suppressed
12	Information for this Company Marked for Deletion by Purge Process
13	Province or Territory Code Not Available

### Segment Codes

Segment Code	Description
84	Non-Financial Trades Only with Public Records or Delinquency on File
85	No Non-Financial Trades with Public Records or Delinquency on File
86	Both Fin. And Non-Fin. Trades with Public Records or Delinquency
87	Non-Financial Trades Only
88	No Non-Financial Trades
89	Both Financial and Non-Financial Trades

## Appendix B

# CDS2 Performance Projection Table

Percentile	Min Score	Max Score	Number of Goods	Number of Bads	Total Population	Bad Rate %	Good-Bad Ratio
10	101	341	24,213	125,817	150,030	83.9%	0.19
20	342	426	111,210	34,905	146,115	23.9%	3.19
30	427	452	135,509	13,370	148,879	9.0%	10.14
40	453	463	135,044	6,792	141,836	4.8%	19.88
50	464	473	141,038	5,752	146,790	3.9%	24.52
60	474	482	137,889	4,302	142,191	3.0%	32.05
70	483	492	147,026	3,188	150,214	2.1%	46.12
80	493	504	153,512	2,407	155,919	1.5%	63.78
90	505	515	145,695	1,285	146,980	0.9%	113.38
100	516	573	145,687	846	146,533	0.6%	172.21

Note: Population above includes all businesses with new or existing trade

## Appendix C

# CDS2 Risk Class Performance Projection Table

Risk Class	Min Score	Max Score	Number of Goods	Number of Bads	Bad Rate	Total Population	Odds of goods to one bad
5	100	360	42,380	136,350	76.29%	178,730	0.3
4	361	430	105,960	26,143	19.79%	132,103	4.1
3	431	480	503,921	27,614	5.20%	531,535	18.2
2	481	540	614,784	8,498	1.36%	623,282	72.3
1	541	600	9,778	59	0.60%	9,837	165.7

## Appendix D

# CDS2 Performance Metrics

Result Summary	Score
Gini Coefficient	82.90%
KS	68.54%
AUROC	91.44%
Bads Captured in the worst 10%	62.00%
Bads Captured in the worst 20%	79.51%
Bads Captured in the worst 30%	86.50%
Bad Rate in the best 10%	0.58%
Bad Rate in the best 20%	0.82%
Bad Rate in the best 30%	1.05%

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