



creditsafe[®]

Creditsafe NL

Generic Scorecards

Ltd and non Ltd companies

Executive Summary

Group Analytics

Version August 2018



1. Executive Summary

1.1. Creditsafe Netherlands Generic Scorecard Overview

In order to improve and increase Creditsafe's presence in the Netherlands market place a new generic suite of scorecards have been developed internally by Creditsafe Group Analytics.

Creditsafe is continuously working on improving its credit scores. We use the latest knowledge in the field of statistical scoring methods. We also optimize and maximize the deployment of our ever-expanding database. This enables us to gain more and more relevant data from our processes and ensures that Creditsafe is utilising the most up to date and relevant information available for the Dutch market. This way we improve the way we score companies and make better and more predictive assessments about a growing number of companies, even in cases where less information is available.

1.2. Scorecards and Segmentation

The essential concept behind Creditsafe's scoring approach is to accurately predict business behaviour (in terms of their good/bad performance over the next 12 months) using a set of characteristics that clearly identify why a business is considered to be high or low risk.

To increase the discriminative power of the scorecard solution, segmentation was conducted. The aim of the segmentation was to define a set of sub-populations that, when modelled individually and combined, rank risk more effectively than a single model on the overall population. An initial split of the sample population was made by dividing companies into "Limited" or "Non-Limited", defined by company legal form.

Company score cards

1. New companies

Limited company score cards

2. Limited companies with no/little trade tape variables
3. Limited companies with trade tape variables

Non-limited company score cards

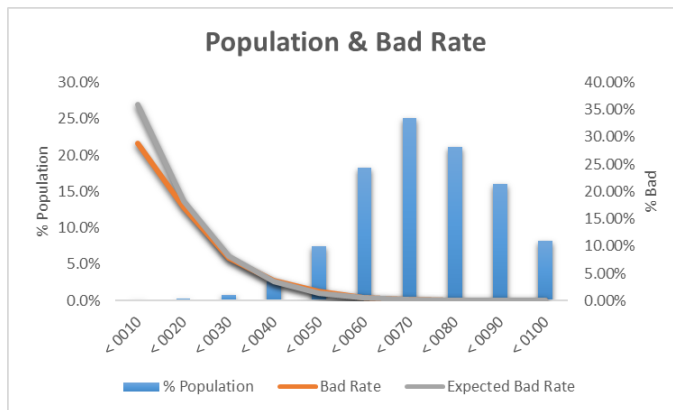
1. Non limited companies with trade tape variables
2. Non limited companies with no/little trade tape variables

1.3. Summary of Results

Total population matrix

Score Band	Volume	%				Bad Rate	Expected	Expected	Expected
		Population	Goods	Bads	Bad Rate		Goods	Bads	Bad Rate
A - 74 - 100	368343	40.0%	368192	151	0.0%	368149	194	0.1%	
B - 59 - 73	313319	34.1%	312640	679	0.2%	312574	745	0.2%	
C - 37 - 58	216081	23.5%	213697	2384	1.1%	213894	2187	1.0%	
D - 27 - 36	16099	1.8%	15253	846	5.3%	15319	780	4.8%	
E - 1 - 26	5974	0.6%	5166	808	13.5%	5057	917	15.3%	
	919816	1	914948	4868	0.53%	914993	4823	0.52%	

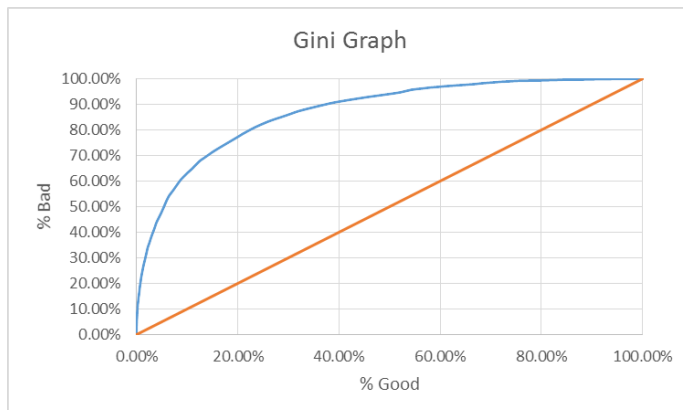
Total population distribution



Total Population Gini and KS

The Gini coefficients represent excellent discrimination across all segments of the Dutch company population. To provide further comfort around the robustness of the scorecard, Creditsafe validated the scorecards using an out of time validation technique. The results showed that all attributes were within tolerance with and acceptable level of accuracy. Creditsafe continuously monitor and validate the scorecards to keep them robust.

The overall Gini score of the total Dutch population is 73.4%.



2. Data Preparation & Population Design

2.1. Sample Design

The scorecards were developed from a generic sample of Netherlands data extracted from the Creditsafe data pool. The selection of the sample definition satisfied the following:

- The generic sample was created to recognise economically active companies. There are sufficient businesses to develop a robust scorecard.
- Each business had a 12 months exposure period, this is sufficient for business performance to be reliably assigned.
- The window covers a full year to avoid seasonality.
- The sample window is recent enough to be representative of the future NL population.

The scorecard development sample was created taking business information from 1st June 2014 to 31st May 2016, giving 24 months of information. A 12 month outcome period was then used from 1st June 2016 to 31st May 2017 to assign the good/bad population.

2.2. CSNL Default Definition

The performance definition defined for the NL scorecard development as below. The performance definition is designed to clearly identify why a business is considered to be high or low risk.

Defaults	Ltd	Non-Ltd
Bad	<ul style="list-style-type: none"> • Bankruptcy 	<ul style="list-style-type: none"> • Bankruptcy • 3 payments (paid or owing) at least 91 days beyond terms
Indeterminate	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • 2 payments (paid or owing) at least 91 days beyond terms
Good	<ul style="list-style-type: none"> • None of the above status definitions 	<ul style="list-style-type: none"> • None of the above status definitions

3. Scorecard Development

Modelling Methodology

Stepwise Logistic Regression has been used to develop the scorecard. This is the preferred methodology within Creditsafe. Logistic Regression has the benefit of outputting a predicted probability of good; this enables the creation of an accurate score to bad rate prediction.

Checking Business Logic

Even if a variable has predictive power, it is still necessary to check that its relationship with the outcome is logical and as expected. The first check on business logic therefore will be performed during the univariate analysis, discarding the variables that are not suitable from a business.



It is necessary however to perform another overall check the model resulting from the regression. If the analysis had been performed correctly the model should be predictive and correct from a mathematical point of view. It is still necessary to check it's validity from the business point of view.

In particular it is necessary to check that the score points given to the characteristic attributes are assigned in a way that is consistent with the corresponding GB rate of all the characteristic attributes defined for a given characteristic. Particular attention is given to the sign of the score point i.e. minus sign appears where a plus sign is expected and vice versa.

Scorecard Calibration:

The output from the logistic model has been transformed into a 1 – 100 Creditsafe score, which is shown on our website. This score is a direct representation of the above calibration methodology. The following table details the relevant PD in relation to the Creditsafe 1 – 100 score.

Score mapping table

CS Score Range			PD Range		
0	-<	5	50.0%	-<	38.6%
5	-<	10	38.6%	-<	28.4%
10	-<	15	28.4%	-<	20.0%
15	-<	20	20.0%	-<	13.6%
20	-<	25	13.6%	-<	9.0%
25	-<	30	9.0%	-<	5.9%
30	-<	35	5.9%	-<	3.8%
35	-<	40	3.8%	-<	2.4%
40	-<	45	2.4%	-<	1.5%
45	-<	50	1.5%	-<	1.0%
50	-<	55	1.0%	-<	0.6%
55	-<	60	0.6%	-<	0.4%
60	-<	65	0.4%	-<	0.2%
65	-<	70	0.2%	-<	0.2%
70	-<	75	0.2%	-<	0.1%
75	-<	80	0.10%	-<	0.06%
80	-<	85	0.06%	-<	0.04%
85	-<	90	0.04%	-<	0.02%
90	-<	95	0.02%	-<	0.02%
95	-<	100	0.02%	-<	0.01%