

# Finding failure

**DUNCAN HALE** EXPLAINS THE ROLE OF THE D&B FAILURE SCORE WITHIN THE WORK OF THE PENSION PROTECTION FUND.

In August 2005, D&B was appointed by the Pension Protection Fund to provide probabilities of insolvency for participating employers in defined-benefit pension schemes. The Pension Protection Fund considered different approaches to measuring insolvency risk, including credit scoring and credit rating, and concluded that D&B's credit scoring method provided a sound quantitative assessment of risk.

The D&B Failure Score is only one element of the Pension Protection Fund Levy, but is perhaps the one which is least known or understood. However, the D&B Failure Score has been in existence for around 20 years, and is relied on by a wide range of businesses across many different markets to drive many decisions, including those relating to credit, sales and marketing and suppliers.

**CREDIBLE METHODOLOGY** D&B is a provider of global business information, tools and insight. It has a track record in the industry and its scoring methodology is already viewed as credible by the industry.

D&B's products and services are drawn from a global database in excess of 100 million companies. Business information is gathered in 214 countries, in 95 languages or dialects, covering 181 currencies. To help ensure the accuracy and completeness of the information, data collection tools update the database nearly one million times a day.

**DATA QUALITY** Information is made as accurate, complete, timely and consistent across borders as possible. The quality assurance process includes more than 2,000 separate automated checks, plus many manual ones, to ensure the data meets our quality standards. In addition, five quality drivers work sequentially to collect and enhance the data. The process works as follows:

- data is brought together from a variety of sources worldwide;
- it is integrated into the D&B database through entity matching, which produces a single, more accurate picture of each business;
- a D-U-N-S number is applied as a means of identifying and tracking a business globally through every step in its life and activity;
- corporate linkage enables a view of the total risk or opportunity across related businesses; and

## Executive summary

- The D&B Failure Score is the least understood element of the Pension Protection Fund Levy.
- The Failure Score is generated from data on millions of businesses and their historical performance.
- The factors influencing it are business demographics, trade information, principals and financial information.
- Failure Score ratings are an independent, unsolicited assessment of the relative risk of a business.

- predictive indicators use statistical analysis to rate the past performance of a business and indicate how likely it is to perform that same way in the future.

This process ensures that all predictive indicators such as the Failure Score use the largest number of sources of accurate and timely data.

**THE FAILURE SCORE** This is created using statistical modelling techniques that look at millions of businesses and their historical performance. Modellers determine which data characteristics are common to failing or successful companies, and use these characteristics to build scoring algorithms (also known as scorecards or score models).

The D&B Failure Score is assigned to the entire country database so that 1% of businesses have the same score. This means that the score shows where a business ranks among scored businesses in the D&B database. For example, if a business has a score of 85, then:

- 1% of the entire database has the same level of risk of failure;
- 84% of the entire database has a higher level of risk of failure; and
- 15% have a lower risk of failure.



**Table 1. Probability of Insolvency**

Percentile Score	Probability of Insolvency
100	0.0740%
99	0.1360%
98	0.1804%
97	0.2216%
96	0.2621%
95	0.3033%
94	0.3456%
93	0.3858%
92	0.4286%
91	0.4714%
etc	

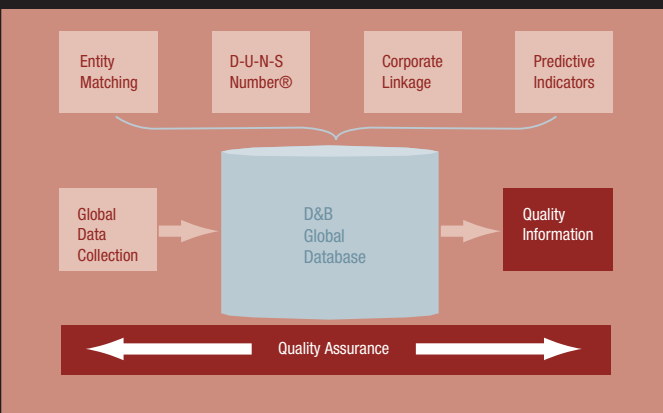
systems to ensure the ratings delivered the following day are as accurate, complete, timely and consistent as possible.

The statistical models that sit behind the ratings are based on a tried and tested mathematical approach tailored to maximise the accuracy of predictions of future financial events. In addition to the quality standards which the data must satisfy, the underlying models are subject to statistical and predictivity tests, both during development and on an ongoing basis.

The models are also reviewed regularly for changes in the underlying population or specific data elements. If these shifts are statistically significant, the models are refined or completely redeveloped to ensure they are as accurately predictive as possible for the representative universe of businesses.

The ratings produced are therefore an independent, unsolicited assessment of the relative risk of a business and its associated probability of failure.

**Figure 1. Failure Score Quality Drivers**



**DATA ELEMENTS** To calculate the scores, D&B collects data in the UK from a variety of public and unique data sources, including Companies House, London and Edinburgh Gazettes, county courts, the electoral roll, the Registry Trust, the Department of Trade and Industry, postal deliverability data, telecoms connectivity data, D&B's trade partners and dedicated call centres.

**DEMOGRAPHIC INFORMATION** A number of factors influence the D&B Failure Score, and these fall into four main categories. The most significant elements in each category are:

- Business demographics: the age of the business, its primary industry sector; and negative information (county court judgements, and so on);
- Trade information: Paydex, the volatility of payment experiences, and the percentage of trade experiences paid;
- Principals: the number, their age and experience, and associated businesses; and
- Financial information: net worth, solvency, and profit/loss.

Every night the scores are recalculated by D&B's dynamic rating

**PROBABILITY OF INSOLVENCY** For each of the 100 Failure Scores, the Pension Protection Fund assumes a probability of insolvency for the purpose of the risk-based levy calculation (see Table 1). It is this probability which then feeds into the risk-based levy calculation.

Because there are so many businesses in the UK with very similar probabilities of insolvency, seemingly small changes in a business's risk profile (for example, if two of a director's other associated businesses go bust) can cause apparently disproportionate changes in the Failure Score. It should be stressed that the probability of insolvency is the important measure, and the likely effect on this is marginal and relatively insignificant. However, the ranking, compared with all other UK businesses, may well have changed.

Duncan Hale is Senior Scoring Consultant Global and Major Customers at D&B.  
**HaleD@dnb.com**  
 www.dnb.com

*For further information about the D&B Failure Score, call D&B Customer Services on 0870 243 2344 or email customerhelp@dnb.com.*

*For information on the PPF and risk-based levy calculation, go to: www.pensionprotectionfund.org.uk.*