



Measuring Business Failure in SMEs

Credit Scoring and Credit Control XIII

Paul Orton
August 2013



Measuring, tracking and predicting insolvent corporate failures is key task for government, the credit community and businesses

Corporate failure is widely used by lenders and CRAs as a measure of business performance

Insolvency is an inadequate measure of company failure for SMEs

Closure definitions of failure also have their shortcomings

Consistently and accurately measuring the performance of businesses is important for developing robust predictive models and assessing their performance

No single measure of company 'failure' for SMEs will likely ever give the whole picture but the methodologies described here show a path for improvement



Summary

There are 2.7 million limited companies in the UK, a 230% increase in the last 20 years. This growth in companies far outstrips the growth in GDP and is a result of changes in company law and taxation practices.

This has changed the profile of the UK limited company universe towards the smaller end of the scale but only marginally. There has been growth in company number across the size range.

In 2005, around 45% of UK companies has total assets greater than £150 000. By 2011, that proportion had dropped to 38%. The volume of companies in this size group had increased from 0.25 million to 0.47 million over the same period.

We show in this report that there is a break point at around £150 000 of total assets where the likelihood of a company becoming insolvent stabilises. We propose that this shows the point where the insolvency measure of failure becomes relevant for measuring limited company outcomes.

Below £150 000 total assets, we need to use different outcomes to measure company failure. This principally involves including companies that dissolve, with no other outside indicators of distress, as failed. It is known that this will classify companies as bad (failed) when in truth they are not.

We propose here a method of classifying dissolved companies as bad by means of assessing the net worth at the point of dissolution. This method provides an interesting method of tracking failure rates but does have a weakness as an outcomes measure for model development. In many cases the net worth at the point of failure is also the net worth at a typical observation point 12 months prior. Nonetheless, it shows that hybrid outcome measures can deliver realistic failure rates.

We recalculate failure rates based on a range of methodologies to show how the recession impacted UK companies.



Some “failure” definitions specific to this paper

Limited company. A company registered with government where shareholders are protected against unlimited losses. In return they have to file annual reports including a financial statement showing that they are in good health.

Insolvency. In this report it is used as an umbrella term cover a number of legal events that are terminal and result in creditor loss. These are appointments of liquidators, receivers and administrators and entry into a voluntary arrangement.

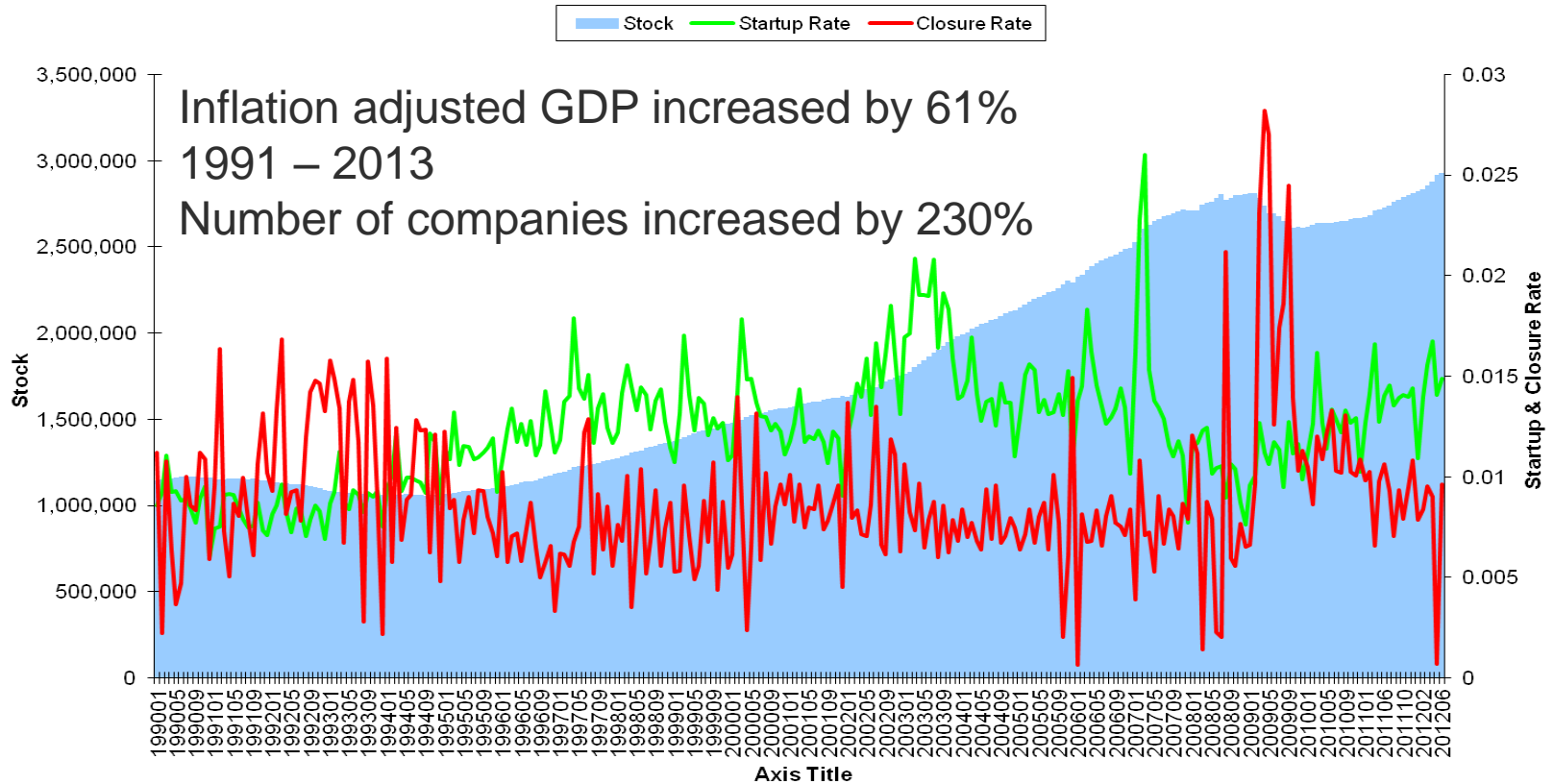
Closure. In this report it is used to cover all the events above but also includes companies that dissolve without any of the insolvency notices. These companies may have failed but also may not.

Enhanced Insolvency. This is an attempt to draw a third-way between the two definition above. It includes all the known insolvencies and in addition the dissolved companies that were technically insolvent in their latest accounts.



Last 20 years has seen a massive growth in the number of limited companies in the UK

Startup and closure rates and underlying stock of firms





Limited company outcomes – Insolvency versus closure

Type 1 vs. Type 2 errors.

All of the companies that are classified as insolvent have “failed”. Creditors have lost money and the business has closed or has legally been reconstituted. However, this definition does not capture all the “bads”. Dissolutions without other adverse legal events are not counted. We have a large number of false negatives

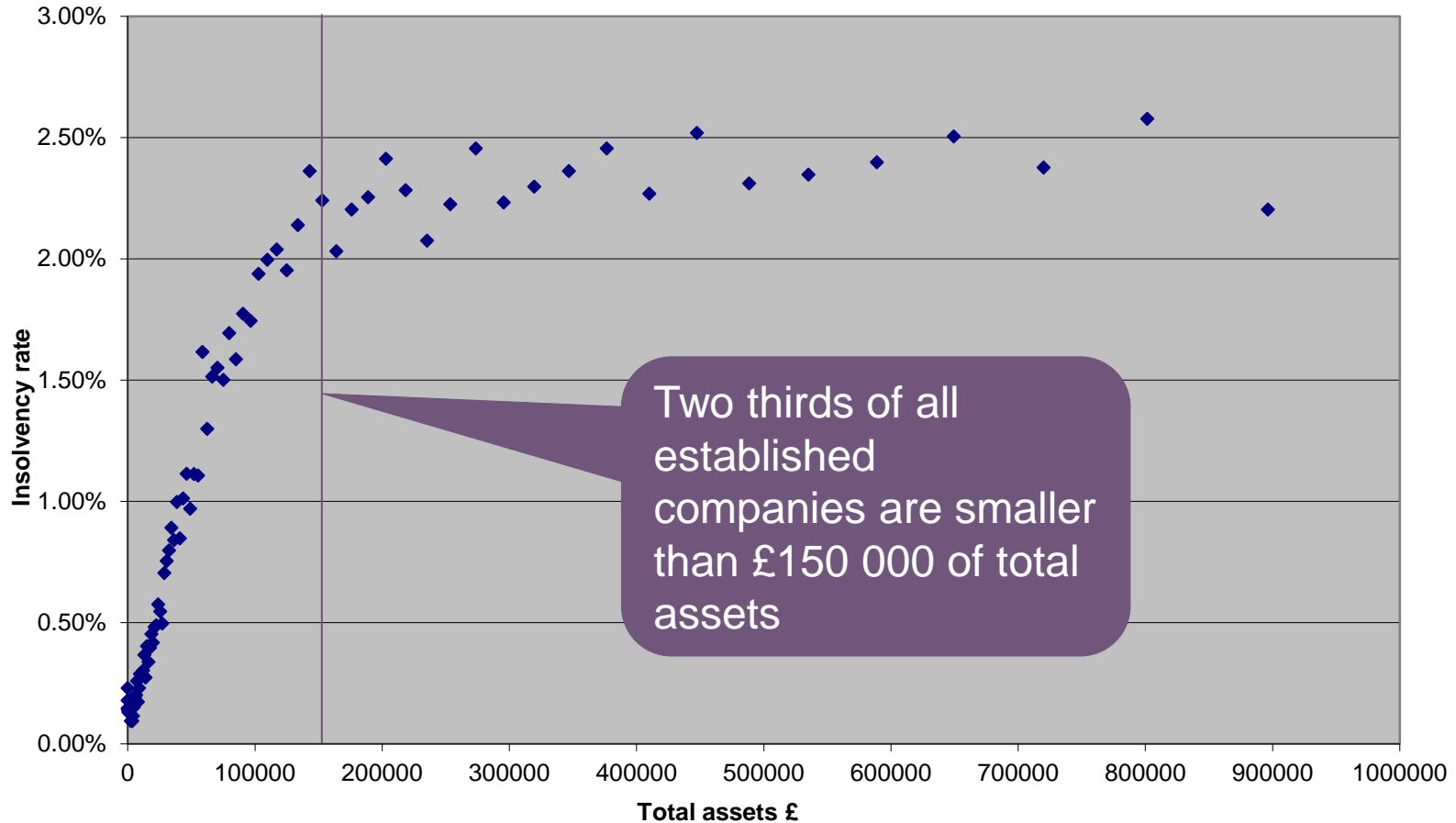
Not all the companies classified as “failed” by the closure definition have failed. We have an unknown but possibly large number of false positives.

The enhanced insolvency definition is an attempt to reduce these errors.



Insolvency definition does not capture failure of small businesses

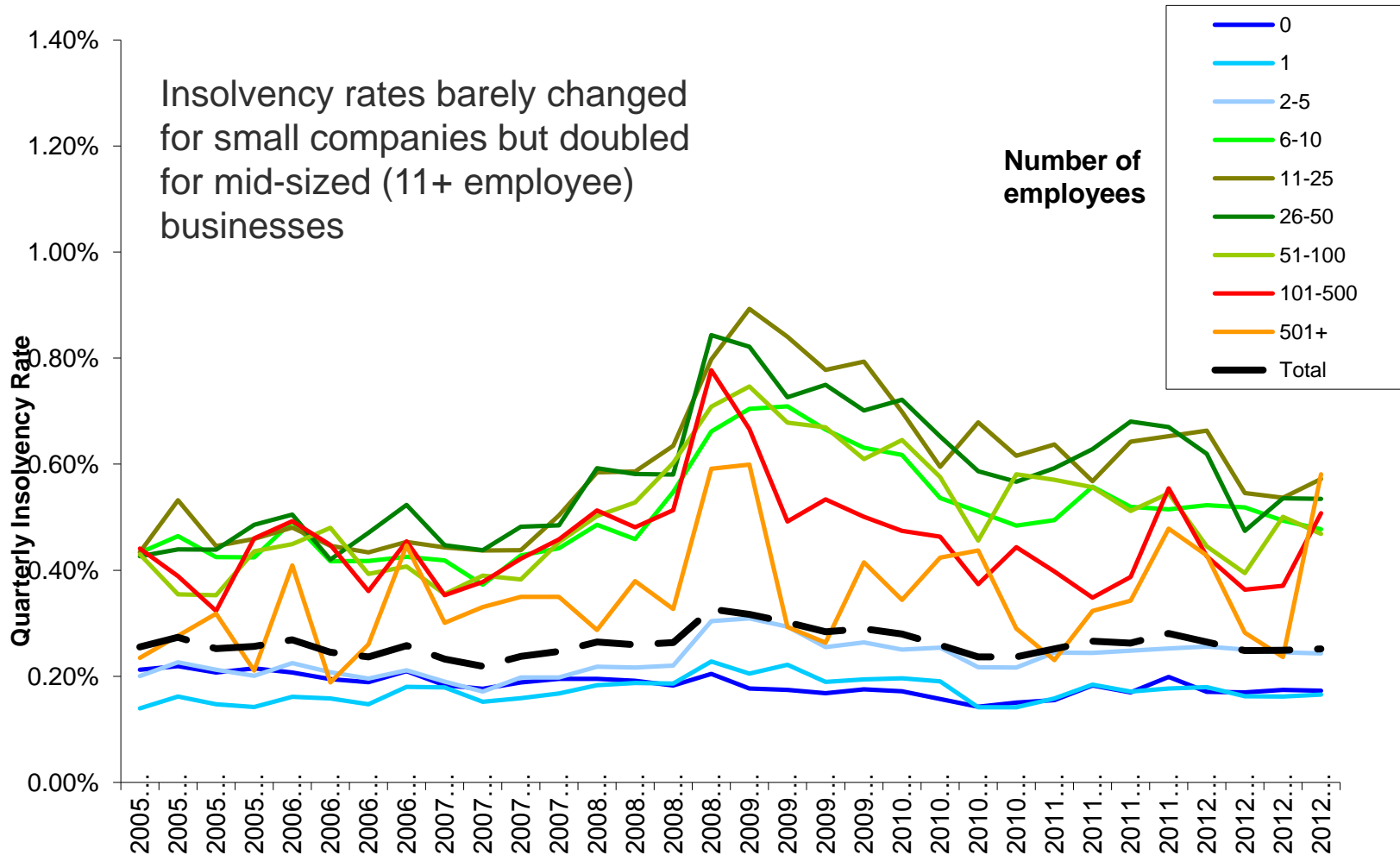
Insolvency rate by total assets (2009 – 2010)





Insolvency rates amongst smallest businesses barely changed through the recession

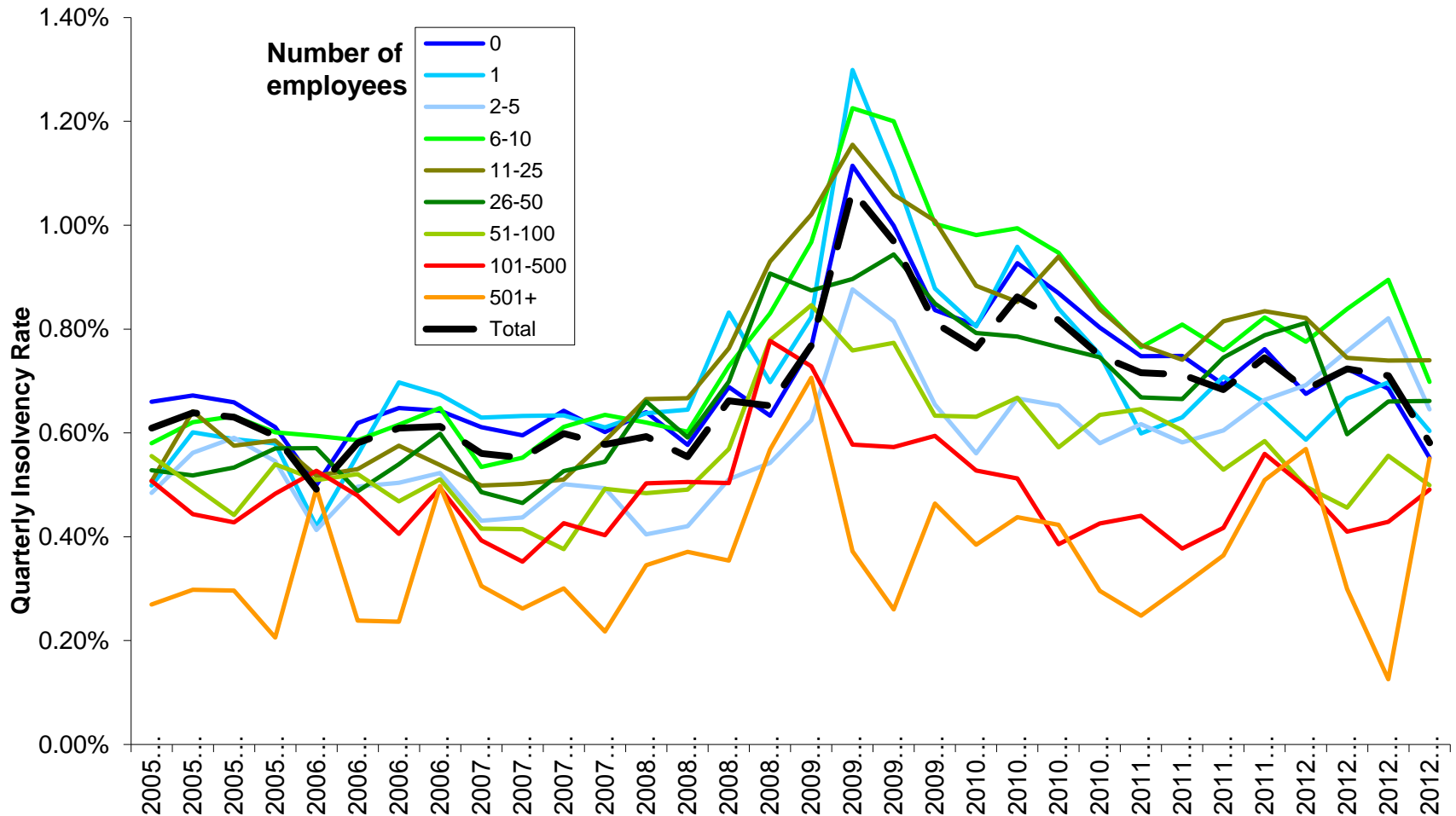
"Official" Insolvencies





Using the adjusted insolvency measure shows a much greater impact on the smallest businesses

Insolvency Rate (Official + Hidden Insolvencies)





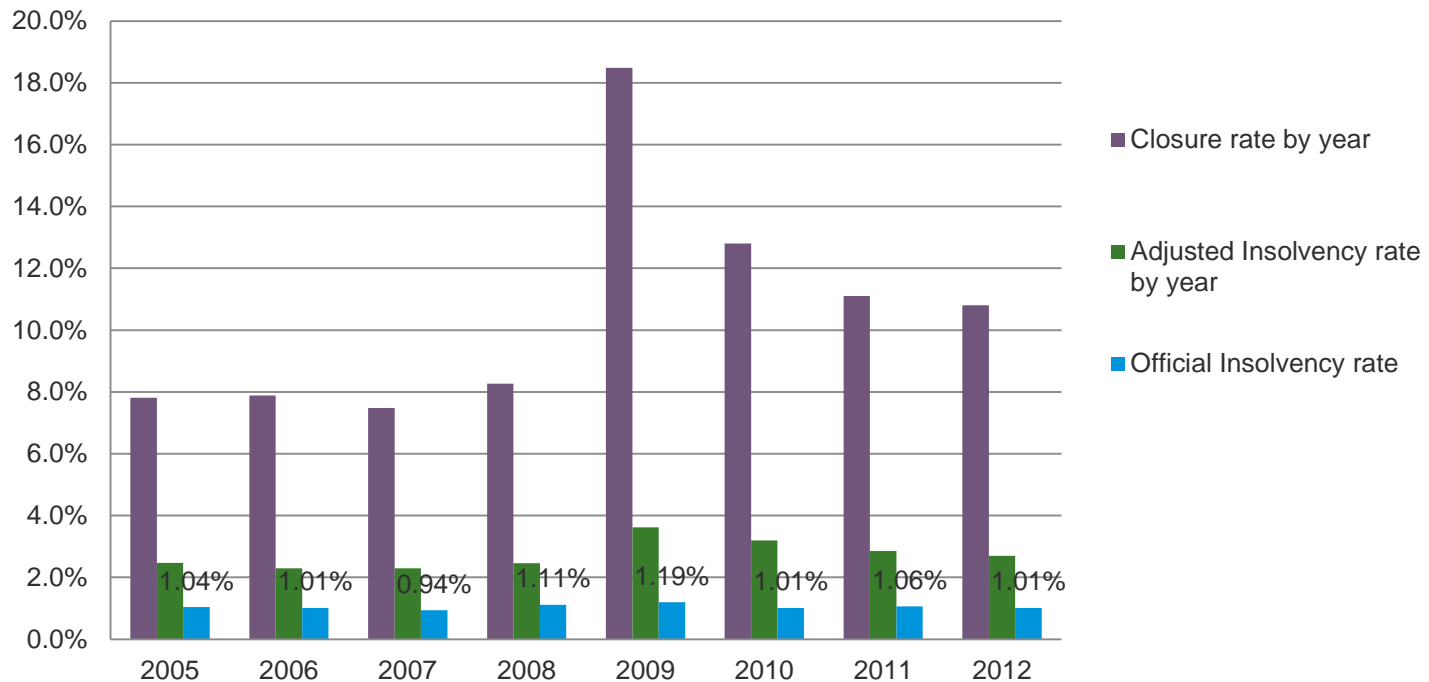
How failure rates might differ if we excluded some dissolved companies

Closure rates during the recession over doubled (250%)

Insolvency rates went up from 0.94% to 1.19% (27%)

Hybrid failure rates went from 2.3% to 3.6% (56%)

Comparison of annualised insolvency rates and closure rates





How failure rates might differ if we excluded some dissolved companies

If some limited companies are extremely unlikely to be classified as insolvent failure then it seems reasonable to exclude these companies from the failure rate calculations.

The changing profile of the limited company universe together with the changes in insolvency numbers combine to give another view of the recession.



Slide(s) that shows modified insolvency rates



Bespoke Scoring offers highly significant uplift

- Quick test models show a large uplift for scorecards with specific outcomes

Evidence that custom models outperform generic models

Also, counterfactual case where generic outcome showed equally strong model



Non-limited Business outcomes

- These business entities present an entirely different challenge.
- The register of businesses is not universal or obligatory and so disappearance from the database does not imply any derogatory behaviour.
- Bankruptcy is a personal event. Credit bureaux can link bankruptcies to businesses but this is a hit and miss process
- Court judgements provide evidence of bad behaviour
- Evidence of whether consumer or commercial derogatory data precedes the other is mixed.

We don't know how many non-limited businesses there are.

Presumption is that there are fewer now than 20 years ago.

Estimates suggest that there are still more than 2 million non-limited businesses and possibly as many as 3 million.

This is without considering unbanked and black economy businesses

Also includes "Third Sector" organisations such as :-

Not for profit service delivery organisations

Charities

Social clubs

Residents organisations



Non-limited Scores and Outcomes

Definition:

Company was active and not “Bad” at observation

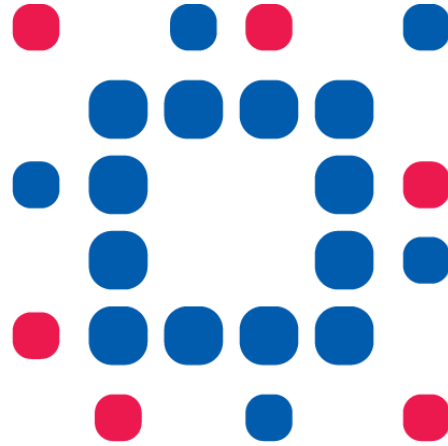
Company has evidence of severe derogatory data such as a bankruptcy or high value court judgement.

Principle	How it rates
Universal	Difficulties in matching non-limited businesses mean that we can never be sure we have found bad data even when it does exist
Terminal	No. Businesses can go on trading with adverse data against them.
Matches business usage	Good. The adverse data outcomes are precisely the sorts of things that lenders want to avoid
Flaws	Doesn't align with the limited company model.



Comparison of consumer and commercial outcomes

GB incl. Default balance		Consumer GB										Total
		Banruptcy during outcome	Judgement during outcome and judgement balance per proprietor >£1000	Default during outcome and default balance per proprietor >£1000	Any record that does not meet any of the other criteria	Judgement during outcome and judgement balance per proprietor <£1000	Default during outcome and default balance per proprietor <£1000	No Consumer data	Bankruptcy at observation	Judgement at observation	Non-Mail order default at observation	
BUSINESS GB		B1	B2	B3	G1	I1	I2	X1	X2	X3	X4	Total
Bankruptcy during outcome	B1	22	1	5	15	0	0	0	5	8	8	64
Judgement during outcome and judgement balance per employee >£1000	B2	8	37	9	57	4	3	1	9	32	31	193
Default during outcome and default balance per employee >£1000	B3	53	20	126	265	4	31	2	13	119	202	838
Any record that does not meet any of the other criteria	G1	297	382	1961	151199	238	1210	236	1094	4689	10554	172017
Judgement during outcome and judgement balance per employee <=£1000	I1	3	4	9	64	18	5	1	6	29	25	165
Default during outcome and default balance per employee <=£1000	I2	21	16	71	341	5	47	2	28	162	261	958
No Business data	X1	77	80	292	18780	31	168	28	194	536	893	21093
Bankruptcy at observation	X2	6	0	1	116	0	0	1	240	38	34	437
Judgement at observation	X3	16	14	21	761	8	11	3	133	725	179	1873
Default at observation	X4	7	12	41	667	7	34	2	287	523	778	2362
Total		510	566	2536	172265	315	1509	276	2009	6861	12965	200000



Experian™

A world of insight