

► *Investment Management*, but from the perspective of UK pension funds rather than US endowments. Its author, Guy Fraser-Sampson, takes to his task with obvious gusto.

In writing *Multi-Asset Class Strategy*, Fraser-Sampson has clearly been inspired by Swensen. However for all its verve and ambition, *Multi-Asset Class Strategy* is unsatisfying. Fraser Sampson's often strident tone contrasts with Swensen's careful, unadorned prose. The shortcomings he perceives in the way the UK pension industry approaches its core task of earning investment returns to fund pension obligations are well deserved. Fraser-Sampson recognises this but his entire quest may soon seem quixotic, as both trustee boards

*There are no clever tricks, no sure-fire, get-rich-quick strategies. Instead there are solid, common-sense prescriptions illustrated with well-chosen examples and careful language.*

and their consultants adapt to the more exacting standards of the Pensions Regulator, the challenge of DC-style plans and the rise of managed account (master trust) platforms.

More telling are the mathematical errors in Fraser-Sampson's arguments, errors that undermine the legitimacy of some of his key assertions. It means that the alternative approach to investing that he proposes rests on an unstable foundation. In a text so critical of prevailing approaches (Fraser-Sampson uses the epithets: "intellectual cowardice", "blind prejudice", and "unthinking", amongst others, to prevailing approaches), such epithets are more than a little ironic. **J**

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## Predicting corporate failure

There have been consistent warnings from world bankers that rising debt levels on both a corporate and consumer level are potential red flags to corporate failure. But what the market requires is more science and less opinion in predicting failure.

**MARK UEBERGANG** reports.

**A**midst a climate of unprecedented financial leverage and rising interest rates, the finance sector is scrutinising the performance of corporate borrowers more closely than ever before. As nervous lenders pore over financial statements looking for any sign of financial distress, the search continues for an accurate means of identifying failure before it occurs.

While insolvency expert Mark Korda jovially swears by the "Aquarium Method", whereby the financial wellbeing of a firm is related inversely to the size and opulence of the fish tank in reception, others prefer a more systematic approach.

Models aimed at predicting corporate failure began to emerge around the time of the Great Depression – probably in response to a sharp rise in the incidence of default.

Today, analysts have a suite of sophisticated techniques from which to choose. Yet, despite the availability of modern alternatives, the Grandfather of predictive models, the "Z-Score", has remained popular among financial analysts.

Details of the Z-Score were published in 1968 by Edward Altman, a professor at New York University. The concept was both simple and intuitive. Altman assembled a sample group of failed firms and a group of similar firms which had not failed. By observing subtle differences in the financial ratios between failed and non-failed firms, Altman was able to construct a general formula for assessing financial health.

To "bench test" Altman's Z-Score we compiled a group of ASX listed firms that had experienced an "insolvency event" such as the appointment of a receiver or voluntary administrator. We established 84 such cases since

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January 2000. Next we calculated the Z-Score for each firm using information from the first, second and third last annual accounts before insolvency occurred.

For those who are not familiar with Altman's Z-Score, the model uses common financial information such as 'Sales Revenue' and 'Total Assets' to derive five basic financial ratios. Each ratio is assigned a weight and summed together to produce the Z-Score. A score of 3 or more is said to mean the firm is healthy. A score of 1.8 to 2.9 is considered a 'Danger Zone' and below 1.8 a firm is considered to have a high probability of failure.

We found that three reporting periods before the insolvency event the median Z-Score of our sample was around the low end of the healthy range at 4.1. A year later the median had fallen to 3.0, the borderline of the

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so called 'Danger Zone'. One period before failure the median score was just 1.60 – which is more or less the point at which Altman considered the firms were certain to fail.

Approximately one-third of our sample was classified as financially distressed three periods before the insolvency occurred and around half of our sample measured some degree of financial distress by the date of their second last annual report. By the time the last report was issued, around two-thirds of failed companies were below the threshold of the Danger Zone and more than half of

the firms sampled were correctly diagnosed as likely to fail (See Table 1).

Of the high profile collapses which occurred in recent years, the fates of Pasmenco (-0.8) and Sons of Gwalia (1.4) were correctly diagnosed from their last financial report, whereas the wellbeing of Henry Walker Elton (2.3) and ION (2.7) was moderately overstated, but below the threshold of the Danger Zone (see Table 2).

The current median score of all companies listed on the ASX (whose scores could be readily determined) is 2.9. An astonishing 52% of these companies scored less than 3.0, which put them into the Danger Zone.

Our research supports the use of Altman's Z-Score as a means of detecting financial distress in Australia, albeit the level of accuracy was well below that observed by Altman in his original study.

To be fair, Altman limited his study to a sample carefully selected by size and industry whereas we tested all failed firms regardless of size or industry due to the limited availability of data.

While the Z-Score proved informative, its output is less than perfect. In some cases the financial wellbeing was moderately overstated while in other cases the model failed to recognise financial distress at all.

Our analysis serves as a reminder that no single model can replace a detailed and thorough financial analysis. As Altman himself noted, the Z-Score should be used as a means of lessening the cost of financial analysis rather than a standalone method of credit evaluation. And the search for the perfect model continues – meanwhile beware the fish tank. **J**

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TABLE 1: OVERALL RESULTS

	Third-last annual report	Second-last annual report	Last annual report
Median (sample of failed firms)	4.1 (Pass)	2.9 (Danger)	1.6 (Fail)
Above 'Danger Zone' threshold	63%	49%	35%
Below 'Danger Zone' threshold	37%	51%	65%

Table illustrates the classification accuracy of the Z-Score when used on our sample of failed firms.

TABLE 2: RECENT HIGH PROFILE FAILURES

	Third-last annual report	Second-last annual report	Last annual report
Sons of Gwalia Limited	Pass (4.0)	Danger (2.5)	Fail (1.4)
Ion Limited	Pass (4.3)	Danger (2.9)	Danger (2.7)
Henry Walker Elton Limited	Danger (2.0)	Danger (1.9)	Danger (2.3)
Pasmenco Limited	Fail (1.4)	Fail (1.0)	Fail (-0.8)

Table illustrates the classification of high profile failures based on their first, second- and third-last annual reports.