

Review of: "An accuracy test of Altman and Zmijewski accounting-based bankruptcy models"

Inês Lisboa¹

¹ Instituto Politécnico de Leiria

Potential competing interests: No potential competing interests to declare.

The paper aims to understand if the Altman and Zmijewski bankruptcy models are still accurate. For this, the author analyzes Portuguese firms, excluding micro-size ones, bank and insurance companies.

In my opinion, the author should stress the innovation of the work. Saying that it analyzes all Portuguese firms is not a relevant reason/contribution. There are some works about Portuguese firms that have concluded that the traditional models are not accurate for the actual reality of Portugal (and also for other markets). Moreover, more recent works of bankruptcy prediction argue that the models should be adapted to the sample, country, region, industry, and the study's aim. See, for instance, Barboza, F., Kimura, H., & Altman, E. (2017). Machine learning models and bankruptcy prediction. *Expert Systems with Applications*, 83, 405–417. <https://doi.org/10.1016/j.eswa.2017.04.006>.

My second concern is related to the use of the Z-score of Altman for emergent markets. Portugal is not classified as an emergent market... Moreover, Altman also has different models per industry since the firms' financial ratios depend on the type of the firms' activity.

I recommend the authors to explain this choice since it is not clear "we included 6 years of data in the sample to reach a bankrupt-to-nonbankrupt ratio between the 1.5% ratio used by Altman et al. (2017) and the 4.8% ratio used by Zmijewski (1984)."

I also suggest the author to explain how he defines a firm in bankruptcy. Was the status presented in the SABI database used? This status is not always the real date of bankruptcy.

Studying all Portuguese firms except for 2 sectors and micro firms, how does the sample only have 9001 nonbankruptcy firms? I have made a study only with Portuguese firms from the accommodation industry, and the sample includes (total) 8688 companies.

To improve the relevance of the work, I suggest the author compare means (or medians) of all ratios for bankr. and nonB.

In the conclusion section, the author should focus on the contributions of the work. In my opinion, for future analyses, the industry effect should also be taken into account.

I wish the author good luck for his work.

