KEYSTONE PROCUREMENT

USER GUIDE

Z-Score Calculator

How to complete the financial due diligence worksheet and read the results

Duty. Service. Integrity.

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START HERE

The calculator at a glance

The Z-Score Calculator turns three years of a company's financial statements into a clear indication of the likelihood of financial distress.

Z-scores come from a long-established set of financial models developed by Edward Altman. There are three versions, and the right one depends on the type of company you are assessing. **Most companies you assess will be private non-manufacturing companies, which use Model 3.**

Use the score as one part of a wider financial due diligence assessment. It is an indicator, not a verdict: it does not tell you that a company will fail, or that it won't.

You will need

- The company's financial statements for its last three financial years, including the balance sheet and the profit and loss account.
- The company name, your name and any internal reference you want on the report.
- Full statements where you can get them. Abridged accounts often leave out the profit and loss account, which holds figures you need.

Five steps to a result

1
Choose
Pick the scoring model that fits the type of company.

2
Gather
Collect three years of financial statements.

3
Enter
Add the details, then enter the figures, oldest year first.

4
Review
Read each year's score, then the average and trend.

5
Save
Download the PDF or print it before you clear the form.

What you will get

For each year	Five calculated ratios, plus the Z-Score, classification and interpretation for the model you chose.
Across all three years	The average Z-Score and the overall trend, so you can see the position over time as well as year by year.
For your records	A version of the assessment you can download as a PDF or print.

Your figures stay with you. Figures entered in the calculator stay in your browser and are not sent anywhere.

STEP 1

Choose the right model

Each model is built for a different type of company, so start with two questions.



	Model 1	Model 2	Model 3
Use it for	Publicly listed manufacturing companies	Privately owned manufacturing companies	Privately owned non-manufacturing companies, such as service providers
Formula	1.2A + 1.4B + 3.3C + 0.6D + E	0.717A + 0.847B + 3.107C + 0.420D + 0.998E	6.56A + 3.26B + 6.72C + 1.05D
Ratio D uses	Market capitalisation	Book value of equity	Book value of equity
Ratio E	Included	Included	Not used
Safe	Above 2.99	Above 2.90	Above 2.60
Grey (some risk)	1.81 to 2.99	1.23 to 2.90	1.10 to 2.60
Distress (serious risk)	Below 1.81	Below 1.23	Below 1.10

When it isn't clear-cut

- **Mixed businesses:** choose the model that fits the activity generating most of the revenue, and note your reasoning in the file.
- **Listed non-manufacturers:** Model 1 was built for manufacturers, so read the result with care and select Model 3 as a cross-check.
- **Why not use one model for everyone?** Revenue can flatter an asset-light company. Model 3 removes ratio E for that reason, as the worked example shows.

STEPS 2 AND 3

Completing the worksheet

1. **Select the scoring model.** Choose it in the **Scoring model** setting, using page 3.
2. **Add the details.** Enter the company name, who prepared the assessment and your reference.
3. **Label the years.** Use the financial year-ends, such as FY2023. **The oldest year goes in the first column**, so the trend reads in the right direction.
4. **Enter the figures in euro.** Use the table below to find each one. Be as accurate as you can, and use the same three sets of accounts throughout.
5. **Enter losses as negative numbers.** Negative values are allowed where they apply, such as retained losses or an operating loss.

Where to find each figure

Figure	Where to look	What to watch for
Working capital	Balance sheet	Current assets minus current liabilities, also shown as net current assets. It is negative when short-term debts exceed short-term assets.
Total assets	Balance sheet	Fixed assets plus current assets. Don't confuse this with net assets.
Retained earnings	Balance sheet, capital and reserves	May appear as "profit and loss account" or "retained profits". Exclude share capital. Can be negative.
EBIT	Profit and loss account	Earnings before interest and tax, often shown as operating profit. Don't use profit after tax. Can be negative.
Equity	Balance sheet	Total capital and reserves, often shown as shareholders' funds.
Total liabilities	Balance sheet	Everything owed, due both within and after one year.
Revenue	Profit and loss account	Usually shown as turnover or sales. Model 3 doesn't use it in the score.

Check your figures before you rely on the result

- **Does it balance?** Total assets should equal total liabilities plus equity, every year.
- **Are the units right?** Accounts often report in €'000. Keep the same unit for every figure and year.
- **Are the years comparable?** Look out for periods longer or shorter than 12 months, which distort revenue and EBIT.
- **Is it the right company?** Use the accounts of the entity you are assessing, not a parent's group accounts, unless the group is what you are assessing.

Save your work

Download PDF	Saves a copy of the assessment for your file.
Print	Sends the assessment to your printer.
Clear form	Removes your entries. Download or print first if you need a record.

MODEL REFERENCE

The three scoring models

Choose the model in the Scoring model setting before you enter any figures. The score, classification, average and trend all follow the model you choose.

Model 3

Private non-manufacturing: most companies

1. Use it for privately owned companies that don't mainly manufacture goods, such as service providers, contractors and consultancies.
2. Formula: **Z = 6.56A + 3.26B + 6.72C + 1.05D**. Ratio E isn't used, so revenue doesn't affect the score.
3. Zones: **above 2.60 is Safe, 1.10 to 2.60 is Grey, and below 1.10 is Distress**.

Model 2

Private manufacturing

1. Use it for privately owned companies that mainly manufacture goods.
2. Formula: **Z = 0.717A + 0.847B + 3.107C + 0.420D + 0.998E**. Ratio D uses the book value of equity.
3. Zones: **above 2.90 is Safe, 1.23 to 2.90 is Grey, and below 1.23 is Distress**.

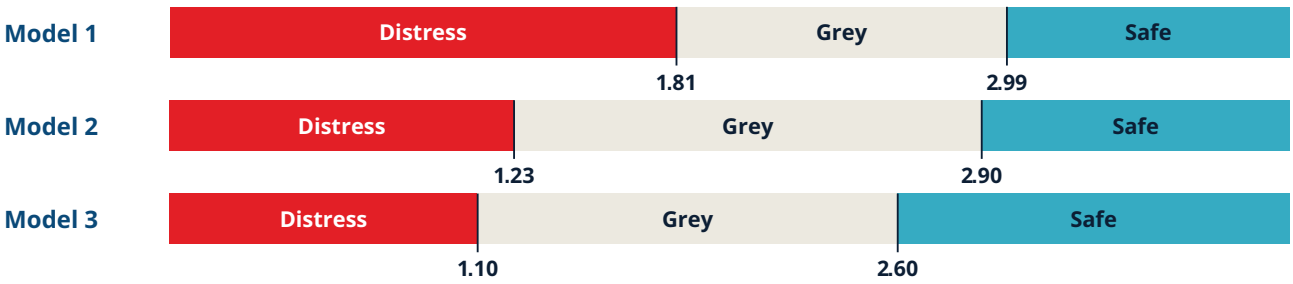
Model 1

Publicly listed manufacturing

1. Use it for manufacturing companies whose shares are traded on a stock exchange.
2. Formula: **Z = 1.2A + 1.4B + 3.3C + 0.6D + E**. Ratio D uses **market capitalisation ÷ total liabilities**, so have the market capitalisation ready: the share price multiplied by the number of shares in issue at each year-end.
3. Zones: **above 2.99 is Safe, 1.81 to 2.99 is Grey, and below 1.81 is Distress**.

Changing the model? Check the result again afterwards. The same figures can land in a different zone under a different model, as the worked examples show.

The zones side by side



Thresholds differ by model, so a score only means something against its own model. A score of 2.70 is Safe under Model 3 but Grey under Models 1 and 2.

UNDERSTANDING THE OUTPUT

Reading the results

Each ratio looks at a different part of the company's financial health. The models weight the ratios differently and add them together to produce the year's score.

	Ratio	What it tells you	M1	M2	M3
A	Working capital ÷ total assets	Liquidity: is there a short-term cushion?	1.2	0.717	6.56
B	Retained earnings ÷ total assets	Track record: how much profit has built up?	1.4	0.847	3.26
C	EBIT ÷ total assets	Earning power: do the assets generate profit?	3.3	3.107	6.72
D	Equity ÷ total liabilities*	Solvency: how much buffer is behind the debts?	0.6	0.420	1.05
E	Revenue ÷ total assets	Efficiency: how much revenue do assets earn?	1.0	0.998	–

* Model 1 uses market capitalisation ÷ total liabilities. M1, M2 and M3 are the weights for Models 1, 2 and 3.

Zone	How to read it	What to do next
Safe	Financial distress looks less likely.	Keep your normal checks in place and review the score at least once a year.
Grey (some risk)	The result is inconclusive, and some risk of financial distress exists.	Look closer at liquidity, gearing and profitability, and monitor the company.
Distress (serious risk)	The indicators point to a serious risk of financial distress.	Investigate further before relying on the company, and consider how you would reduce your exposure.

The 3-year average

An overall indication of the company's position across the period. An average can hide large changes between years, so always review each year as well.

The trend

A supplementary view of how the score has moved across the three years. Read it with the annual scores and the average. It is not a standalone measure of financial viability.

The average and trend appear once all three years are complete.

Where each score sits

The calculator also shows where each year's score sits on the scale for your model. Read the three positions together: a score moving towards the Distress zone matters even while it is still in the Grey or Safe zone.

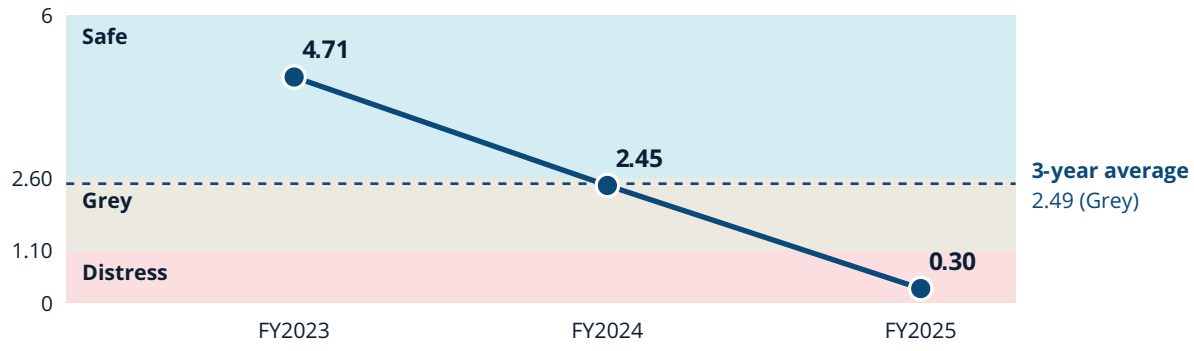
WORKED EXAMPLE: MODEL 3

Why the model matters

Example Services Ltd is a fictional private service company, so it uses Model 3. Its revenue is high compared with its assets, which is where the wrong model can mislead.

Figures (€)	FY2023	FY2024	FY2025
Working capital	500,000	100,000	−200,000
Total assets	2,000,000	2,100,000	2,200,000
Retained earnings	600,000	540,000	370,000
EBIT	240,000	84,000	−110,000
Equity	1,100,000	1,040,000	870,000
Total liabilities	900,000	1,060,000	1,330,000
Revenue	6,800,000	6,300,000	6,600,000

Results	FY2023	FY2024	FY2025
A · Working capital ÷ total assets	0.250	0.048	−0.091
B · Retained earnings ÷ total assets	0.300	0.257	0.168
C · EBIT ÷ total assets	0.120	0.040	−0.050
D · Equity ÷ total liabilities	1.222	0.981	0.654
E · Revenue ÷ total assets (not in Model 3)	3.400	3.000	3.000
Model 3 score (the right model)	**4.71**	**2.45**	**0.30**
Model 3 classification	**Safe**	**Grey**	**Distress**
Model 2 score (if the wrong model were chosen)	4.71	3.78	3.19
Model 2 classification	Safe	Safe	Safe



What this tells you

For FY2025, Model 3 gives (6.56 × −0.091) + (3.26 × 0.168) + (6.72 × −0.050) + (1.05 × 0.654) = 0.30. That is Distress. Had Model 2 been chosen in the calculator, the same company would have been rated Safe in all three years, because its high revenue lifts ratio E.

The average is a warning of its own. At 2.49, it sits in the Grey zone, while the annual scores fall from Safe to Distress. None of this proves the company will fail. It does tell you where to ask questions: why working capital has turned negative, what caused the FY2025 loss and how the company is funding its short-term debts.

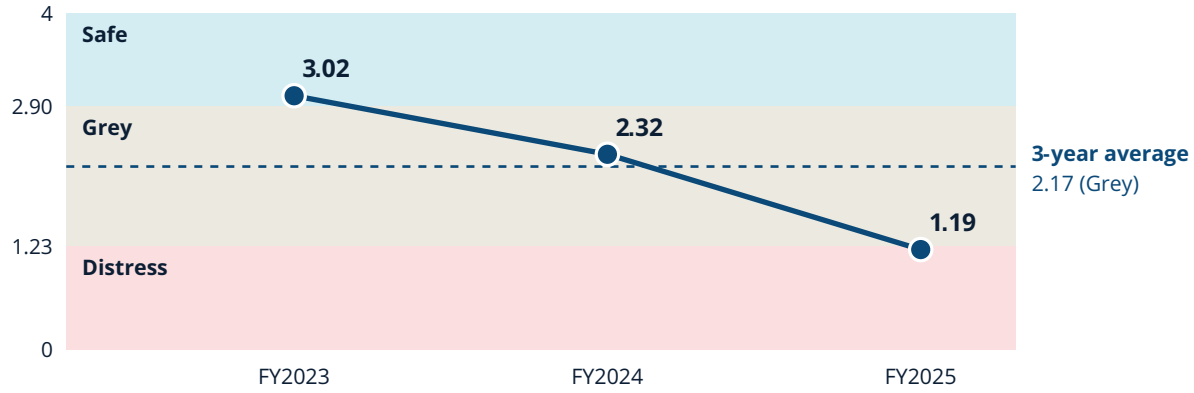
WORKED EXAMPLE: MODEL 2

When the average hides the story

Example Supplies Ltd is a fictional private manufacturer. Its 3-year average of 2.17 sits in the Grey zone, which looks unremarkable. The annual scores tell a different story.

Figures (€)	FY2023	FY2024	FY2025
Working capital	500,000	200,000	−200,000
Total assets	2,000,000	2,100,000	2,200,000
Retained earnings	600,000	540,000	360,000
EBIT	240,000	84,000	−110,000
Equity	1,100,000	1,040,000	860,000
Total liabilities	900,000	1,060,000	1,340,000
Revenue	3,400,000	3,150,000	2,200,000

Results	FY2023	FY2024	FY2025
A · Working capital ÷ total assets	0.250	0.095	−0.091
B · Retained earnings ÷ total assets	0.300	0.257	0.164
C · EBIT ÷ total assets	0.120	0.040	−0.050
D · Equity ÷ total liabilities	1.222	0.981	0.642
E · Revenue ÷ total assets	1.700	1.500	1.000
Model 2 score	**3.02**	**2.32**	**1.19**
Classification	**Safe**	**Grey**	**Distress**



What this tells you

Taken alone, the average suggests a company in the middle ground. In fact, the score has fallen every year, from Safe in FY2023 to Distress in FY2025. Working capital has turned negative, and EBIT has moved from profit to loss.

It doesn't prove the company will fail. It does tell you where to ask questions: what caused the 2025 loss, how the company is funding its short-term debts, and what has changed since the accounts were signed.

WORKED EXAMPLE: MODEL 1

When the market moves the score

Example Engineering plc is a fictional listed manufacturer. Model 1 replaces book equity with market capitalisation, so investor confidence feeds directly into the score.

Figures (€)	FY2023	FY2024	FY2025
Working capital	1,500,000	1,000,000	200,000
Total assets	10,000,000	10,500,000	11,000,000
Retained earnings	3,000,000	2,800,000	2,400,000
EBIT	1,000,000	700,000	200,000
Market capitalisation	7,000,000	4,000,000	1,500,000
Total liabilities	5,000,000	5,500,000	6,500,000
Revenue	13,000,000	11,000,000	9,900,000

Results	FY2023	FY2024	FY2025
A · Working capital ÷ total assets	0.150	0.095	0.018
B · Retained earnings ÷ total assets	0.300	0.267	0.218
C · EBIT ÷ total assets	0.100	0.067	0.018
D · Market capitalisation ÷ total liabilities	1.400	0.727	0.231
E · Revenue ÷ total assets	1.300	1.048	0.900
Model 1 score	**3.07**	**2.19**	**1.43**
Classification	**Safe**	**Grey**	**Distress**

What this tells you

The score falls from 3.07 to 1.43, from Safe to Distress. Falling revenue and profit play a part, and so does ratio D, which drops as the market capitalisation shrinks and liabilities grow. Ask what the market has seen, and whether the accounts support it.

GOOD PRACTICE

Using the score well

The score reads the accounts. It can't read the room.

Know the limits

- **The accounts are historic.** By the time they are published, the company's position may have changed, for better or worse.
- **It shows resemblance, not destiny.** The score reflects how closely a company's ratios resemble those of distressed companies. Some low scorers survive, and some high scorers don't.
- **Each model has a specific origin.** Model 1 was built for listed manufacturers, Model 2 for private manufacturers and Model 3 for non-manufacturers. A company that doesn't fit neatly needs more care.
- **It sees only the numbers.** Management, contract dependency, ownership and market conditions don't appear in the ratios.

Build the wider picture

- Repeat the assessment at least once a year for the companies you depend on.
- Read the score with other financial ratios, such as the current ratio, quick ratio, gearing and return on capital employed.
- Review auditor's reports, going concern notes, management accounts and credit reports, as the risk requires.
- Check whether the company files its accounts on time with the Companies Registration Office. Late filing can be a red flag.
- Reduce your exposure where needed, through credit controls and alternative suppliers or customers.

Running a public procurement? Financial requirements must be set out in the procurement documents, and must be related and proportionate to the subject matter of the contract. Decide how you will use the score before you go to market, and take advice if it is to be a selection criterion.

HELP

Common questions

Which model should I use if I'm unsure?	If the company is private and doesn't mainly manufacture goods, use Model 3. If it could go either way, run both models and keep both results on file.
Why can't I see the average or trend?	Both need figures for all three years. Check that every column is complete.
The company has fewer than three years of accounts. Can I still use it?	You can score the years you have, but a short record gives you less to go on. Rely more on your wider due diligence.
The score looks wrong. What should I check first?	Check the scoring model, column order, units and the sign of any losses, then confirm that the balance sheet balances.
Does a Distress score mean we should rule the company out?	Not on its own. It is a prompt to investigate further, and one part of the overall assessment.

Read more: Using z-score models to assist financial due diligence and Construction bids and tenders post-Carillion.

Need a hand? Keystone Procurement is the trusted procurement partner you need by your side.
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This guide and the calculator are general information tools. They are not financial, legal or credit advice. Model references: Altman, E.I. (1968), "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy", *The Journal of Finance*, 23(4); Altman, E.I. (1983), *Corporate Financial Distress*, Wiley. © 2026 Keystone Procurement Ltd.