

M E T H O D O L O G Y   O V E R V I E W

# Total Cost of Forecast Inaccuracy (TCFI)

How Sinera Sales Lab quantifies the financial cost of forecast inaccuracy for manufacturing companies

|               |                                                             |
|---------------|-------------------------------------------------------------|
| Document type | Client-facing methodology overview                          |
| Prepared by   | Sinera Sales Lab                                            |
| Audience      | Finance, commercial, and operations leaders                 |
| Website       | <a href="https://sinerasaleslab.com">sinerasaleslab.com</a> |

---

# What Is the TCFI Model?

Most manufacturing companies track forecast accuracy. Very few have calculated what that inaccuracy actually costs.

The Total Cost of Forecast Inaccuracy (TCFI) model is Sinera's proprietary framework for translating a single forecast accuracy metric — Weighted MAPE (WMAPE) — into a fully loaded annual cost figure. It breaks the cost into four operational categories, benchmarks the result against industry data, and expresses the output as a percentage of revenue.

**The core question**

If your WMAPE is X%, what is that costing your business every year — in pounds or dollars?

The model is designed for finance and commercial conversations. Every parameter is grounded in published academic and industry benchmark research. The output is directional and conservative — a credible starting point, not an audited P&L figure.

## Why WMAPE?

There are several ways to measure forecast accuracy. Sinera uses Weighted Mean Absolute Percentage Error (WMAPE) as the primary metric for one reason: it reflects financial exposure, not just unit count.

| Metric           | Why we use or avoid it                                                                                                              |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| WMAPE ✓          | Volume-weighted — higher-value periods contribute more. Directly proportional to revenue at risk. Our primary metric.               |
| Simple MAPE ✗    | Treats all periods equally regardless of volume. Overstates the impact of low-volume misses. Not used.                              |
| Bias (secondary) | Directional measure — whether a business over- or under-forecasts on average. Used to allocate cost between overstock and stockout. |

**Formula**

$$\text{WMAPE} = \text{Total absolute error} \div \text{Total actual demand} \times 100$$

A WMAPE of 22%, for example, means that on a volume-weighted basis, the business's forecasts deviate from actual demand by 22 percentage points. The TCFI model calculates what that deviation costs across the four categories below.

# The Four Cost Categories

TCFI is calculated as the sum of four components. Each captures a distinct mechanism through which forecast error converts into financial loss.

|           |                                                                                                                                                                                                                                                  |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>C1</b> | <b>Inventory Overstock</b><br>When demand is over-forecast, production runs too high and stock accumulates. C1 captures the cost of holding, managing, and — where applicable — writing off that excess inventory.                               |
| <b>C2</b> | <b>Stockout &amp; Lost Margin</b><br>When demand is under-forecast, the business cannot fulfil orders on time. C2 captures lost contribution margin, emergency expediting costs, and any contractual penalties from missed delivery commitments. |
| <b>C3</b> | <b>Production Disruption</b><br>Unstable forecasts force schedule changes. C3 captures the cost of production changeovers, overtime premiums, and the inefficiency created by replanning cycles that would not occur under accurate forecasting. |
| <b>C4</b> | <b>Planning &amp; Admin Overhead</b><br>Persistent forecast error requires ongoing management intervention. C4 captures the time cost of exception handling, replanning meetings, and the administrative burden of operating in a reactive mode. |

Each category draws on a separate set of benchmarks calibrated to manufacturing industry data. In the diagnostic engagement, all benchmarks are replaced with actual company data.

## Industry Benchmark Grading

The WMAPE score produced by the tool is benchmarked against published manufacturing performance data and assigned a grade. This provides immediate context — not just a cost figure, but a clear position relative to best-in-class.

| Grade | WMAPE range | Verdict       | Typical cost range    |
|-------|-------------|---------------|-----------------------|
| A+    | < 10%       | Best-in-class | 1.5 – 2.5% of revenue |
| B     | 10 – 20%    | Good          | 2.5 – 5% of revenue   |
| C     | 20 – 30%    | Average       | 5 – 9% of revenue     |
| D     | 30 – 45%    | Below average | 9 – 15% of revenue    |
| F     | > 45%       | High risk     | > 15% of revenue      |

On a £10 million revenue base, a C-grade WMAPE of 22% typically implies a cost of forecast inaccuracy in the range of £500,000 – £900,000 per year. Most organisations have never quantified this figure.

# How the Estimate Is Produced

The online tool generates a directional estimate in under four minutes. It requires four inputs:

| Input                  | Why it matters                                                                       |
|------------------------|--------------------------------------------------------------------------------------|
| Annual revenue         | Scales the cost output to your business size                                         |
| Gross margin %         | Determines how much revenue is at risk in each stockout or overstock scenario        |
| Planning lead time     | Longer frozen schedules amplify inventory overstock cost                             |
| Forecast accuracy data | Period-by-period forecast vs actual — or a confidence self-assessment if unavailable |

Where precise data is unavailable, the tool provides a confidence slider that maps to a proxy WMAPE range. All other parameters are populated from industry benchmark defaults.

Important

The tool output is a directional estimate, not an audited figure. It is designed to make the order of magnitude of the problem visible — so the decision to address it is a conscious, informed one.

## Three scenarios

Every estimate is presented across three scenarios — conservative, base case, and high — to reflect uncertainty in the input data. The base case uses submitted data directly. The conservative and high scenarios apply adjustments to reflect variability.

# From Estimate to Diagnostic

The TCFI tool produces an estimate. The Sinera diagnostic produces a precise, validated figure — and identifies which cost category is driving the exposure.

|                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>TCFI Tool</b><br>Directional estimate <ul style="list-style-type: none"><li>4-minute self-service</li><li>Industry benchmark defaults</li><li>Order-of-magnitude output</li><li>Three scenario bands</li><li>Immediate — no engagement needed</li></ul> | <b>Sinera Diagnostic</b><br>Calibrated, validated figure <ul style="list-style-type: none"><li>Fixed scope — 5 working days</li><li>Actual company data replaces all defaults</li><li>Category-level cost breakdown</li><li>Root cause identification</li><li>Actionable recommendations included</li></ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

The diagnostic replaces every benchmark default with actual client data, validates the WMAPE calculation against historical records, and produces a category-level breakdown that identifies whether the primary driver is overstock, stockout, production disruption, or administrative overhead.

Scope

Fixed scope. 5 working days. No implementation required. Delivered as a written report with a live readout session.

**Book a Free 30-Minute Call**

Discuss your TCFI estimate and whether the diagnostic makes commercial sense for your business.

**[sinerasaleslab.com](https://sinerasaleslab.com) | [emreyildirim@sinerasaleslab.co.uk](mailto:emreyildirim@sinerasaleslab.co.uk)**