Budget and Forecast Methodology

Retail Budget, Sales and Profit Forecasting Model

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Developed as a professional portfolio project to demonstrate practical data analytics skills to recruiters and hiring managers.

Transparent historical comparisons and scenario assumptions, with their interpretation and refresh requirements.

Budget method

The dataset contains no official budget. For each of five categories and nine months in Jan-Sep 2023, the comparable 2022 sales are retrieved from tblMonthlyActuals. Category targets in tblCategoryTargets are set to 8% in the supplied workbook. Budgeted sales = prior-year sales x (1 + category target).

Actual sales and gross profit are retrieved for the current month/category. Sales variance = actual sales - budgeted sales. Variance percentage = sales variance / budgeted sales. Budgeted gross profit = budgeted sales x the 30% target margin in Assumptions!I8.

Example: January Art & Crafts prior-year sales $35,097.18 x 1.08 = $37,904.95 budget. Actual sales $195,905.22 produce $158,000.27 favourable variance. The unusually large percentage reflects a small prior-year baseline and should be interpreted in that context.

Budget interpretation

The 8% targets and 30% margin are editable modelling choices, not externally validated forecasts or management-approved targets. Budget Year and Low Stock Threshold are displayed assumptions, but the examined budget dates are generated with 2023 explicitly in DATE formulas. Changing the displayed Budget Year alone does not establish that the model moves to a new year. A completed low-stock exception report was not evidenced.

Jan-Sep comparison	Result
Sales above modelled budget	$1,216,349.15 / 21.17%
Gross profit above modelled budget	$100,524.46
Actual gross margin	26.20% versus 30% target

Forecast method

Forecasts cover Oct-Dec 2023 and use the corresponding 2022 month-category sales and costs as seasonal baselines. There are 15 rows. Aggregate baseline sales are $2,162,382.23 and aggregate baseline costs are $1,544,632.23.

Forecasted sales = baseline sales x (1 + selected growth). Forecasted cost = baseline cost x (1 + selected growth) x (1 + selected cost change). Forecasted gross profit = sales - cost. Forecasted margin = total gross profit / total sales.

Applying the growth factor to both sales and cost treats growth as a volume-like expansion at an unchanged baseline product-price mix. The extra cost factor models a cost-rate change. The model does not separately estimate demand, selling-price inflation, product mix, supply constraints or store openings.

Scenario	Growth	Cost change	Sales	Gross profit	Margin
Best Case	12%	-1%	$2,421,868.10	$709,179.88	29.28%
Expected Case	7%	2%	$2,313,748.99	$627,937.37	27.14%
Worst Case	-3%	6%	$2,097,510.76	$509,319.90	24.28%

Expected Case is the middle planning assumption (7% growth, 2% cost increase). Best Case assumes 12% growth and a 1% cost reduction. Worst Case assumes a 3% sales/volume decline and a 6% cost increase. The supplied workbook is saved in Best Case.

December has the largest forecast sales total in each scenario because its corresponding 2022 seasonal baseline is the largest. This is inherited seasonality, not evidence that a new predictive algorithm discovered the pattern.

Scenario operation and controls

1. Open Assumptions and select a valid case in B3. 2. Check B4/B5 against the scenario table. 3. Review Forecast!A4, C4, E4 and G4. 4. On Analysis, right-click a value in the forecast PivotTable beginning at X55 and choose Refresh. 5. Return to Dashboard and confirm the forecast chart agrees with its KPI cards.

Historical actuals and the separately modelled category budget should remain unchanged when only the forecast scenario changes. If source data is refreshed, allow Power Query to finish before refreshing supporting PivotTables so they read the updated tables.

Validation evidence

All 15 saved forecast cost rows agree with baseline cost x growth factor x cost factor. Independent scenario evaluation reproduces the saved Best Case total sales and gross profit. The Worst Case independent totals round to the supplied screenshot values ($2,097,511 sales and $509,320 gross profit). Best/Worst chart captures also show different monthly forecast values. Expected Case has been calculated independently but was not captured in a supplied screenshot.

Limits and assumptions

The budget is a modelled target, not an official company budget. Forecasts are assumption-based estimates using one prior-year seasonal baseline, not a fitted statistical model or a measured prediction-accuracy result. Profit means gross profit before operating expenses, tax and financing. Product master prices and costs are applied to historical units; transaction-specific price changes and discounts are not separately modelled. Inventory is a snapshot without a time relationship and its potential profit is not realised sales profit.

There are no forecast confidence intervals, statistical backtests or out-of-sample error metrics in the evidenced implementation. The available historical window has only one Oct-Dec seasonal reference. Results support scenario exploration rather than a claim of guaranteed future performance.

Evidence: supplied completed XLSX workbook, 16 project screenshots and project-work conversation history. Source attribution: Mexico Toy Sales, Maven Analytics (https://mavenanalytics.io/data-playground). Dollar symbols follow the supplied workbook and source price formatting; this documentation does not independently establish a currency code.