



ICP Dashboard

Scenario Modeling

Reference Guide

What-If Rate Analysis, CAS 410 Base Evaluation,
Statistical Base Change Justification, and Indirect Rate Optimization

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GovConDash.ai

*Prepared for government contractor finance teams, cost accountants,
DCAA auditors, and consulting professionals.*

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Section 1: Purpose and Scope

1.1 Purpose

This reference guide provides comprehensive documentation of the Scenario Modeling module within the ICP Dashboard. It describes the analytical tools, statistical methods, and regulatory compliance features available for evaluating alternative indirect cost rate structures and G&A allocation base types under CAS 410 and FAR 31.203.

The guide is intended for use by government contractor finance professionals (Controllers, Cost Accountants, Accounting Managers), consulting practitioners preparing incurred cost proposals on behalf of clients, and DCAA auditors evaluating the adequacy of base change justification documentation.

1.2 Scope

This guide covers the following functional areas of the Scenario Modeling module:

Rate Adjustment: Direct modification of indirect cost pool amounts and allocation base amounts with real-time rate recalculation.

CAS 410 Base Analysis: Comparative evaluation of Total Cost Input (TCI), Value Added, and Single Element (Direct Labor) G&A allocation bases with formula breakdowns and regulatory compliance guidance.

Target Rate Calculator: Reverse computation of required pool or base amounts to achieve specified indirect cost rates.

Impact Analysis: Simulation of cost reclassifications between indirect cost pools, including cascading effects on G&A allocation bases under TCI and Value Added methodologies.

Base Change Justification Analysis: Four statistical methods—Ordinary Least Squares regression, comparative rate impact analysis, sensitivity and outlier analysis, and aggregate weighted scoring—for documenting CAS 410-50(d) and FAR 31.203(e) compliance when changing G&A allocation bases.

Scenario Comparison: Side-by-side evaluation of up to three alternative rate structures against the established baseline.

Reporting and Export: Generation of formatted analysis reports and multi-sheet Excel workbooks suitable for DCAA submission and audit documentation.

1.3 Prerequisites

Scenario creation requires that the ICP schedule generation pipeline has been executed at least once through the Prepare Proposal wizard (Steps 1–7). The scenario baseline is derived from the current Schedule A rate summary, Schedule E allocation base data, and Summary Schedule H cost breakdown. If schedules have not been generated, the module displays a prerequisite notice and disables scenario creation.

1.4 Regulatory Framework

The scenario modeling and base change justification features are designed to support compliance with the following regulatory requirements:

Regulation	Section	Applicability
CAS 410	410-50(d)(1)–(3)	Criteria for selecting and changing the G&A expense allocation base. Requires that the base represent total business unit activity for the cost accounting period.
FAR 31.203	31.203(b)–(g)	Indirect cost allocation requirements: consistency (b), beneficial/causal relationship (c), anti-fragmentation (d), revision triggers for changed circumstances (e), base period alignment (g).
FAR 30.604	General	General Dollar Magnitude (GDM) proposal requirements for cost accounting practice changes, including quantification of cost impact to affected contracts.
CAS 418	418-50	Criteria for allocation of direct and indirect costs to homogeneous cost pools and final cost objectives.
FAR 42.703	42.703-1	Administration of final indirect cost rates. Contracting officer authority to establish rates based on the contractor's incurred cost proposal.

Section 2: Scenario Management

2.1 Accessing the Module

The Scenario Modeling module is accessed via the Scenario Modeling button in the left sidebar navigation panel. The module presents three tabs at the top of the content area: Scenario Editor (default), Base Change Analysis, and Compare Scenarios.

2.2 Creating a Scenario

Scenario creation is initiated by clicking the “+ New Scenario” button and providing a descriptive name. The system performs the following initialization:

1. Clones the current indirect cost rate structure from Schedule A, including all overhead pool rates, the G&A rate, intermediate pool rates, fringe rate (if applicable), and Cost of Money factors.
2. Captures a cost breakdown snapshot from Summary Schedule H and Schedule E, recording direct labor, direct material, subcontracts, travel, other direct costs, applied fringe, applied overhead, and intermediate allocations.
3. Records the current base configuration flags: G&A base type (TCI, Value Added, or Single Element), fringe-in-OH-base setting, and fringe-as-separate-rate setting.
4. Stores the above as the immutable baseline snapshot against which all scenario adjustments are measured.

All subsequent modifications operate on the scenario’s computed state and do not affect the underlying ICP data or generated schedules.

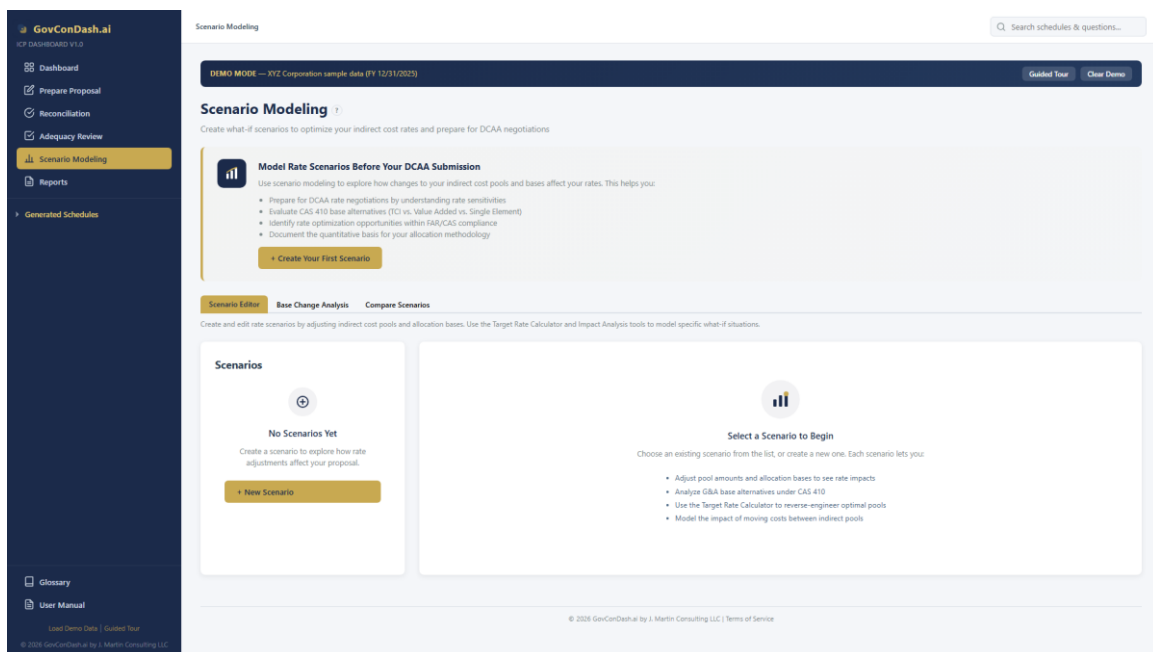


Figure 1: Scenario Modeling module — initial state prior to scenario creation

2.3 Scenario List Operations

The left panel displays all saved scenarios with the following management operations:

Select: Click a scenario card to load it in the editor panel. The selected scenario is indicated by a highlighted border.

Rename: Modify the scenario name to reflect its analytical purpose (e.g., “CAS 410 VA Base — FY 2025”).

Duplicate: Create a deep copy of the scenario including all adjustments. The copy receives the suffix “(Copy)” and a new creation timestamp.

Delete: Permanently remove the scenario after confirmation. This operation is irreversible.

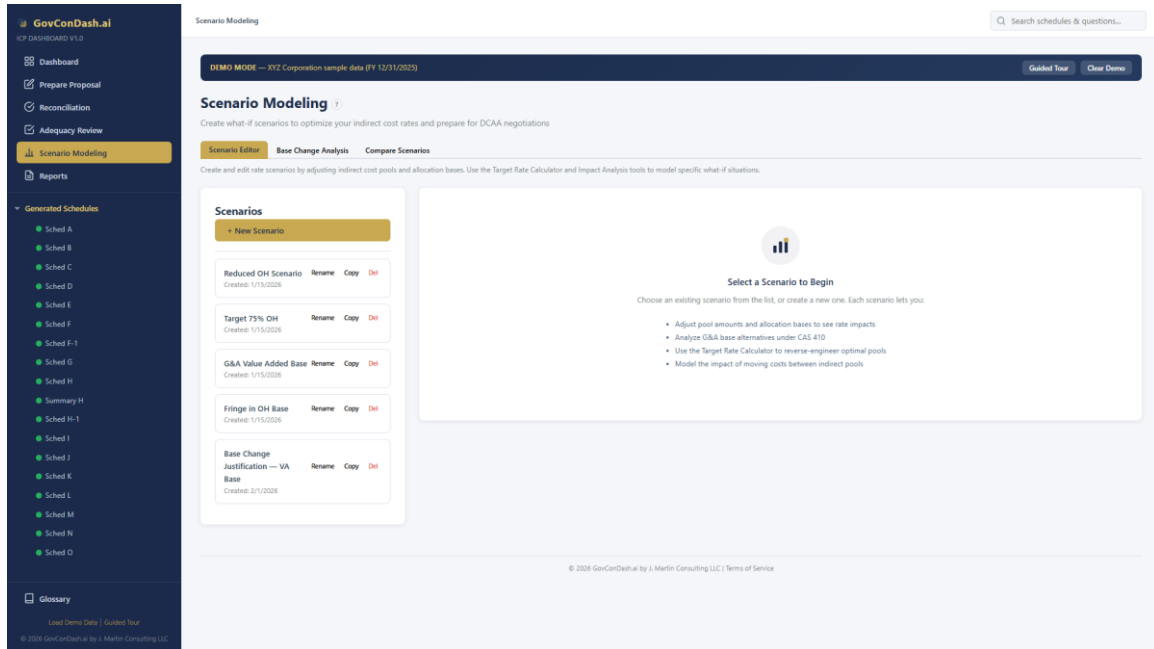


Figure 2: Scenario list panel with demo scenarios and management controls

Section 3: Rate Table Editor

3.1 Rate Overview Table Structure

The Rate Overview table presents the full indirect cost rate structure in an editable format. Each indirect cost pool occupies one row, with the following columns:

Column	Type	Description
Pool	Read-only	Name of the indirect cost pool as defined in Setup configuration
Baseline Pool \$	Read-only	Pool amount from the original Schedule A at time of scenario creation
Baseline Base \$	Read-only	Allocation base amount from the original Schedule E
Baseline Rate	Read-only	Computed rate = Pool ÷ Base, rounded to 4 decimal places
Adjusted Pool \$	Editable	Modified pool amount for the what-if scenario
Adjusted Base \$	Editable	Modified allocation base amount for the what-if scenario
Adjusted Rate	Computed	Recalculated rate from adjusted pool ÷ adjusted base (4 decimal places)
Delta	Computed	Difference between adjusted and baseline rates. Green indicates a rate decrease; red indicates an increase.

3.2 Rate Computation

All indirect cost rates are computed using the standard rate formula:

$$\text{Rate} = \text{Pool Amount} \div \text{Base Amount}$$

Rates are rounded to four decimal places for overhead, G&A, and fringe pools. Cost of Money factors use five decimal places, consistent with the ICE Model precision requirements. Dollar amounts are rounded to whole dollars.

When a pool or base amount is modified, the system recalculates all rates within the scenario. For G&A, the base amount is recomputed using the selected base type methodology (see Section 4), which may incorporate OH pool deltas. This ensures that cascading effects between pool changes and G&A base composition are properly reflected.

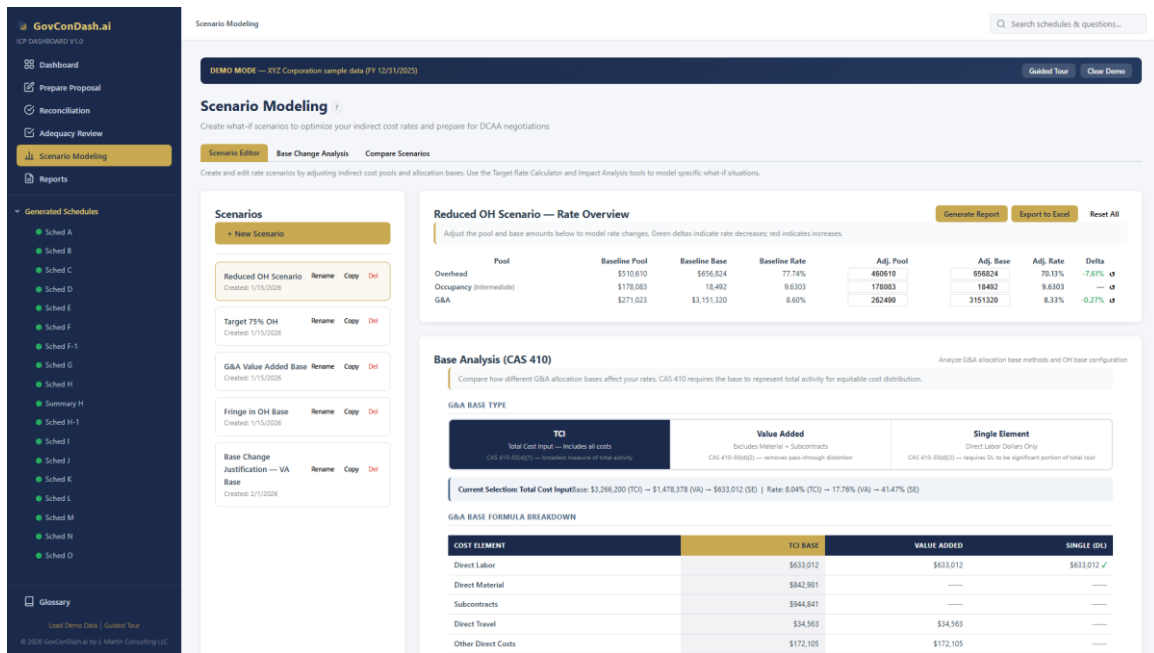


Figure 3: Rate Overview table showing baseline and adjusted columns with computed deltas

3.3 Delta Interpretation

Delta values represent the absolute change in rate between the adjusted scenario and the baseline. Color coding follows a standard convention for government contracting rate analysis:

Green (↓ decrease): The adjusted rate is lower than the baseline rate, resulting in reduced indirect cost allocation to final cost objectives.

Red (↑ increase): The adjusted rate is higher than the baseline rate, resulting in increased indirect cost allocation.

NOTE: Delta indicators reflect the mathematical change only. Whether a rate change is favorable depends on the context: a lower OH rate may reduce contract costs, but a higher G&A rate may reflect more equitable allocation under CAS 410.

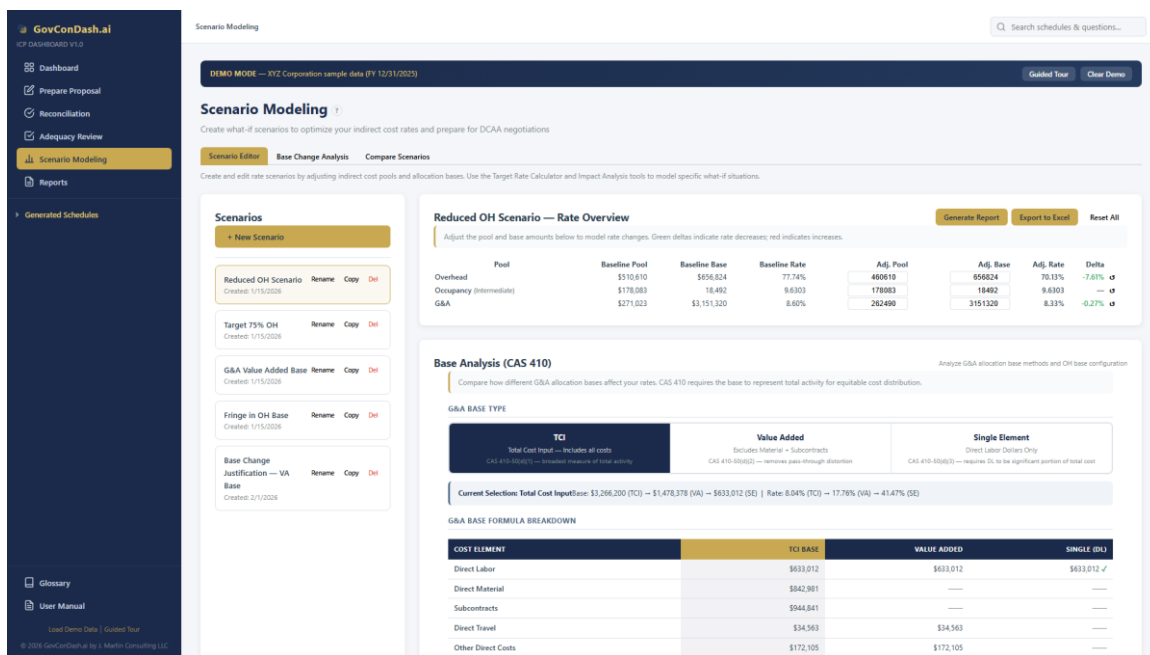


Figure 4: Rate delta highlighting — green for rate decreases, red for rate increases

3.4 Reset Operations

Per-Pool Reset: The circular arrow icon on each row restores that individual pool’s adjusted values to the baseline snapshot.

Reset All: The “Reset All” button in the Rate Overview header restores the entire scenario to its original baseline state, clearing all adjustments. This operation requires confirmation.

3.5 Output Generation

Two output options are available from the Rate Overview header:

Generate Report: Produces a formatted, printable analysis report containing an executive summary, complete rate comparison table (baseline vs. adjusted), CAS 410 base analysis, and cost breakdown detail. The report is rendered in a browser view optimized for PDF output via the browser’s Print function.

Export to Excel: Downloads a multi-sheet .xlsx workbook containing the scenario summary, rate comparison data, base analysis detail, and computation formulas. Number formatting follows ICE Model conventions: #,##0 for currency, 0.00% for rates, and 0.00000 for COM factors.

Section 4: CAS 410 Base Analysis

4.1 Overview

Cost Accounting Standard 410 (Allocation of Business Unit General and Administrative Expenses to Final Cost Objectives) establishes the criteria for selecting the G&A allocation base. CAS 410-50(d) specifies that the allocation base should represent the total activity of the business unit for the cost accounting period. The Base Analysis card enables comparative evaluation of three permissible base methodologies.

4.2 Allocation Base Types

Base Type	CAS Reference	Formula	Description
Total Cost Input (TCI)	410-50(d)(1)	Direct + Fringe + OH + Intermediate	The broadest measure of total business unit activity. Includes all cost elements. CAS 410 establishes a preference for this base type as the default.
Value Added	410-50(d)(2)	TCI – Material – Subcontracts	Excludes direct material and subcontract costs. Appropriate when pass-through costs distort the G&A allocation across contracts with significantly different material/subcontract profiles.
Single Element (DL)	410-50(d)(3)	Direct Labor Dollars	Uses a single cost element as the base. Requires demonstration that the element constitutes a significant portion of total costs. Subject to the strictest justification requirements.

4.3 Base Type Selection

The Base Analysis card displays three selectable options. When a base type is selected, the system performs the following:

1. Recomputes the G&A allocation base using the selected methodology and the scenario’s cost breakdown data.
2. Recalculates the G&A rate as $G\&A\ Pool \div G\&A\ Base$.
3. Updates the formula breakdown table showing all cost elements and their inclusion/exclusion under each methodology.
4. Evaluates and displays applicable regulatory compliance warnings.

The currently selected base type is highlighted with a gold border. The formula breakdown table uses an em-dash (—) to indicate elements excluded from a given base type.

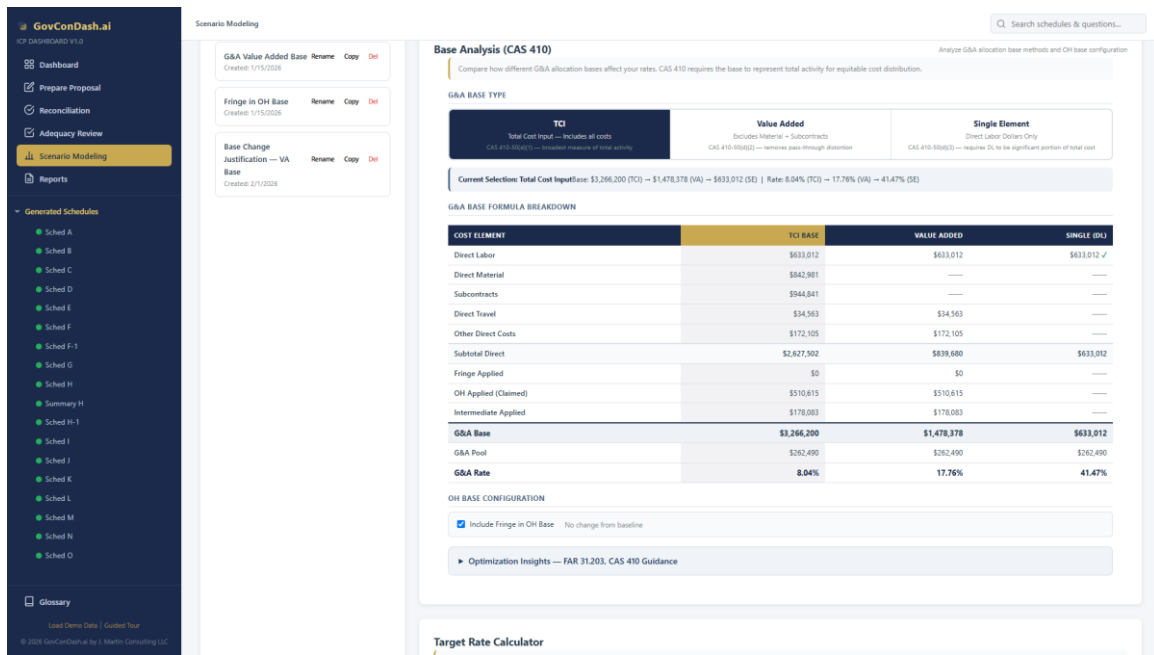


Figure 5: CAS 410 Base Analysis card with three allocation base options and formula breakdown

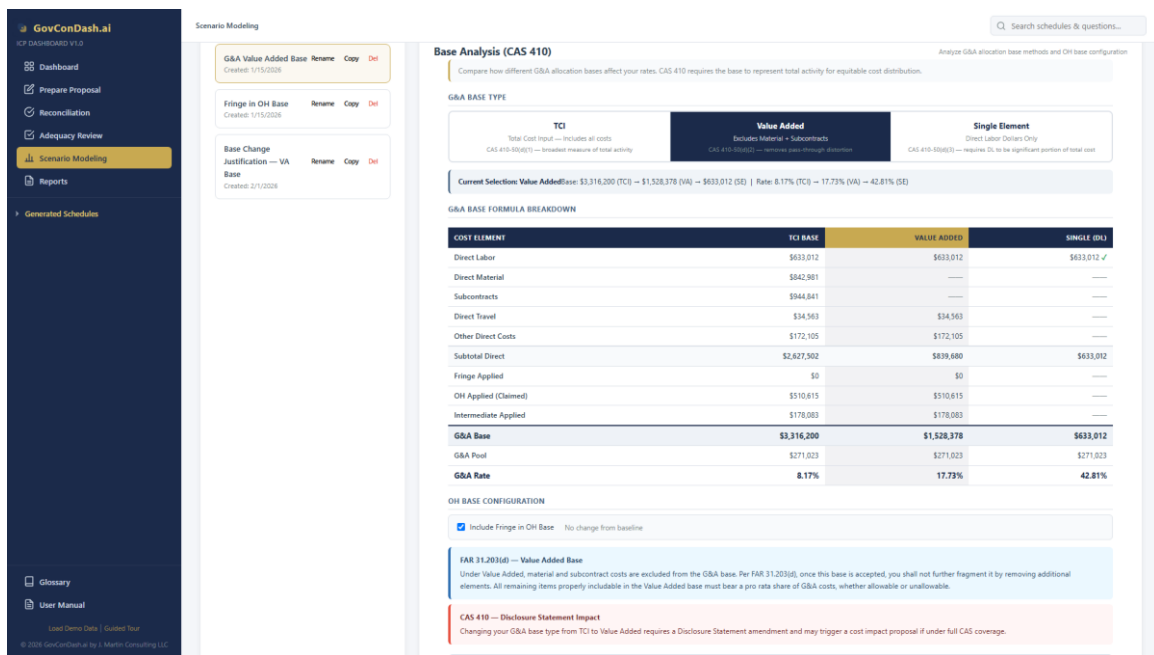


Figure 6: Value Added base type selected with formula breakdown table

4.4 OH Base Configuration

The “Include Fringe in OH Base” toggle controls whether employer-paid fringe benefit costs are added to the overhead pool’s allocation base. This configuration affects OH rate computation and, for TCI and Value Added base types, cascades into the G&A base calculation through the modified OH pool amount.

When the toggle state differs from the baseline, an impact label displays the dollar magnitude of the fringe amount added to or removed from the OH base.

4.5 Regulatory Compliance Warnings

The system evaluates the selected configuration and displays applicable warnings:

Condition	Regulation	Warning
Value Added selected	FAR 31.203(d)	Anti-fragmentation: once material and subcontracts are excluded, all remaining cost elements (labor, travel, ODC, fringe, OH) must remain in the base. Further fragmentation is prohibited.
Single Element selected	FAR 31.203(c)/(d)	The allocation must distribute costs on the basis of benefits received. The selected element must constitute a significant portion of total costs. Documentation of the practical basis for this method is required.
Base type differs from system config	CAS 410 / DS-1	Changing the G&A base type constitutes a cost accounting practice change requiring a Disclosure Statement (DS-1) amendment. For contractors under full CAS coverage, this may trigger a cost impact proposal per FAR 30.604.

4.6 Optimization Insights

An expandable reference panel provides structured regulatory guidance organized into six sections: FAR 31.203 indirect cost allocation rules, CAS 410 compliance considerations, criteria for Value Added base adoption, the distinction between legitimate rate optimization and inequitable cost shifting, tactical approaches for rate structure modification, and downstream implications of accounting practice changes (customer/auditor communications, system implementation, training, and cost impact proposals).

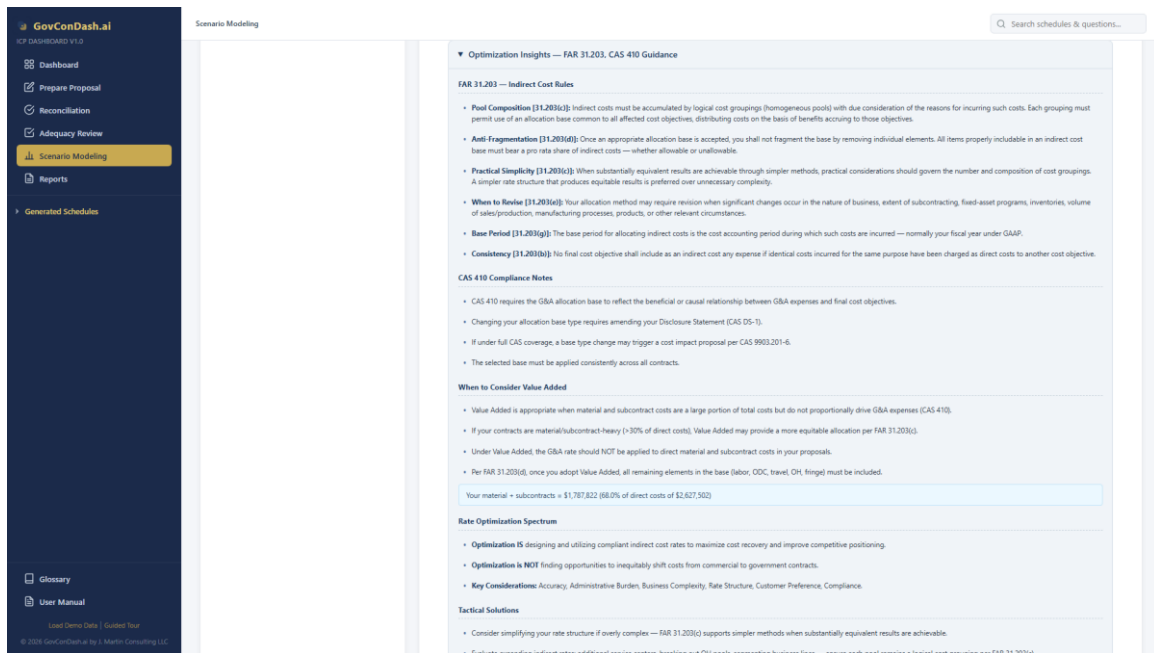


Figure 7: Expanded Optimization Insights panel with FAR and CAS regulatory guidance

Section 5: Target Rate Calculator

5.1 Purpose

The Target Rate Calculator performs reverse computation to determine the pool amount or base amount required to achieve a specified indirect cost rate. This is useful for rate negotiation preparation, forward pricing rate proposal development, and evaluating the feasibility of rate targets established during incurred cost negotiations with the Contracting Officer or DCAA auditor.

5.2 Computation Methods

The calculator supports two solution modes:

Solve for Pool Amount: $\text{Required Pool} = \text{Target Rate} \times \text{Current Base}$

Solve for Base Amount: $\text{Required Base} = \text{Current Pool} \div \text{Target Rate}$

The result displays the required amount, the current amount, and the signed delta (increase or decrease required).

5.3 Procedure

1. Select the target pool from the dropdown (available options include all overhead pools, G&A, and fringe if configured as a separate rate).
2. Enter the target rate as a percentage (e.g., 75 for 75.0000%).
3. Select the solve-for direction: Pool Amount or Base Amount.
4. Click Calculate. The result panel displays the required amount with a comparison to the current value.
5. Optionally click “Apply to Scenario” to commit the computed amount to the scenario’s adjusted state.

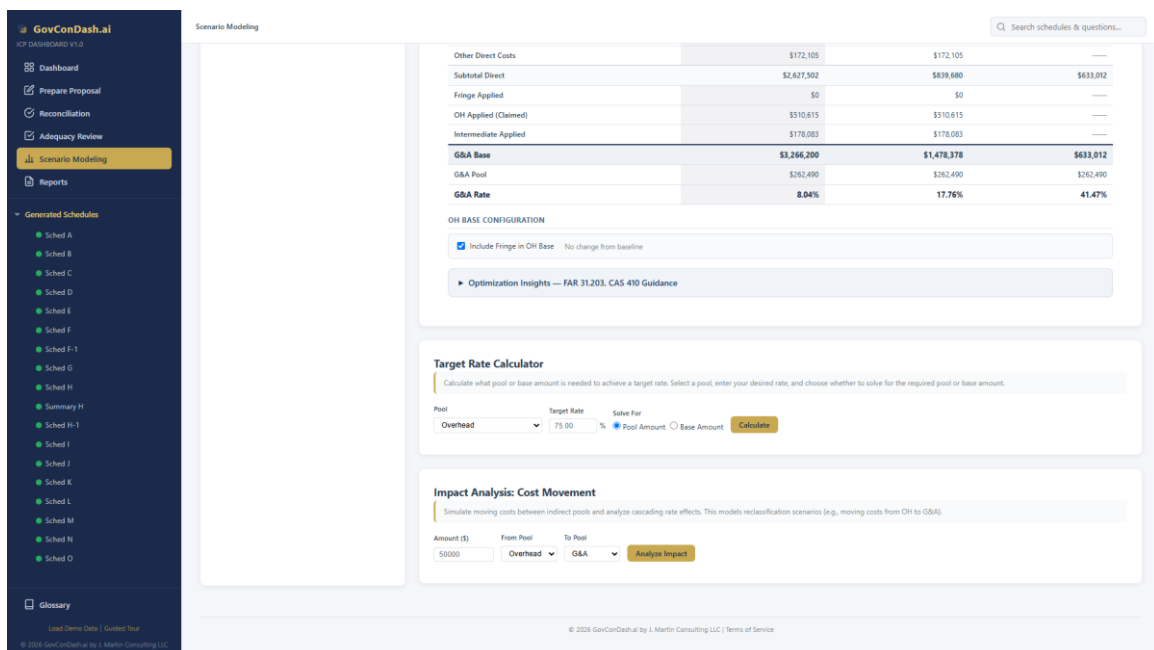


Figure 8: Target Rate Calculator interface with pool selection and solve-for options

The screenshot displays the 'Scenario Modeling' section of the GovConDash.ai dashboard. On the left is a dark sidebar with navigation links: Dashboard, Prepare Proposal, Reconciliation, Adequacy Review, Scenario Modeling (highlighted in yellow), Reports, and Generated Schedules. Below these are links for Glossary and User Manual, and a footer with '© 2025 GovConDash.ai by J. Martin Consulting LLC'. The main content area is titled 'Scenario Modeling' and features a search bar. It contains three main sections: a table of cost breakdowns, an 'OH BASE CONFIGURATION' section, a 'Target Rate Calculator', and an 'Impact Analysis: Cost Movement' section.

Subtotal Direct	\$2,827,502	\$839,680	\$633,012
Fringe Applied	\$0	\$0	---
OH Applied (Claimed)	\$510,615	\$510,615	---
Intermediate Applied	\$178,083	\$178,083	---
G&A Base	\$3,266,200	\$1,478,378	\$633,012
G&A Pool	\$262,490	\$262,490	\$262,490
G&A Rate	8.04%	17.76%	41.47%

OH BASE CONFIGURATION

Include Fringe in OH Base No change from baseline

► Optimization Insights — FAR 31.203, CAS 410 Guidance

Target Rate Calculator

Calculate what pool or base amount is needed to achieve a target rate. Select a pool, enter your desired rate, and choose whether to solve for the required pool or base amount.

Pool: Overhead Target Rate: 75.00 % Solve For: Pool Amount Base Amount

Please enter a valid target rate.

Impact Analysis: Cost Movement

Simulate moving costs between indirect pools and analyze cascading rate effects. This models reclassification scenarios (e.g., moving costs from OH to G&A).

Amount (\$): 50000 From Pool: Overhead To Pool: G&A

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Figure 9: Calculator result displaying required pool amount and delta from current

NOTE: The Target Rate Calculator modifies a single variable (pool or base) while holding the other constant. For scenarios requiring simultaneous adjustment of both pool and base, use direct editing in the Rate Overview table.

Section 6: Impact Analysis

6.1 Purpose

The Impact Analysis tool simulates the reclassification of costs from one indirect cost pool to another and computes the resulting effect on all indirect cost rates. This capability supports evaluation of proposed accounting practice changes, cost reclassification decisions, and organizational restructuring scenarios before implementation.

6.2 Procedure

1. Enter the dollar amount to reclassify.
2. Select the source pool (“From”) from which costs will be removed.
3. Select the destination pool (“To”) to which costs will be added.
4. Click “Analyze Impact.” The result panel displays a before-and-after rate comparison for all affected pools.
5. Optionally click “Apply to Scenario” to commit the simulated reclassification.

The screenshot displays the 'Scenario Modeling' interface. On the left is a navigation sidebar with options like 'Dashboard', 'Prepare Proposal', 'Reconciliation', 'Adequacy Review', 'Scenario Modeling', and 'Reports'. The main area shows a table of indirect costs and a 'Target Rate Calculator' and 'Impact Analysis: Cost Movement' section.

Category	Current Amount	Target Amount	Target Rate
Other Direct Costs	\$172,105	\$172,105	---
Subtotal Direct	\$2,827,502	\$839,680	\$633,012
Fringe Applied	\$0	\$0	---
OH Applied (Claimed)	\$510,615	\$510,615	---
Intermediate Applied	\$178,083	\$178,083	---
G&A Base	\$3,246,200	\$1,478,378	\$633,012
G&A Pool	\$282,490	\$282,490	\$282,490
G&A Rate	8.04%	17.76%	41.47%

OH BASE CONFIGURATION
 Include Fringe in OH Base No change from baseline

► Optimization Insights — FAR 31.203, CAS 410 Guidance

Target Rate Calculator
 Calculate what pool or base amount is needed to achieve a target rate. Select a pool, enter your desired rate, and choose whether to solve for the required pool or base amount.

Pool: Overhead Target Rate: 75.00 % Solve For: Pool Amount (selected) Base Amount

Impact Analysis: Cost Movement
 Simulate moving costs between indirect pools and analyze cascading rate effects. This models reclassification scenarios (e.g., moving costs from OH to G&A).

Amount (\$): 50000 From Pool: Overhead To Pool: G&A

Figure 10: Impact Analysis interface with reclassification inputs

6.3 Cascading G&A Base Effects

A critical analytical consideration is the cascading effect of overhead pool changes on the G&A allocation base. Under TCI and Value Added methodologies, applied overhead is a component of the G&A base. Therefore, reclassifying costs between an OH pool and G&A—or between two OH pools with different allocation bases—will alter not only the directly affected pool rates but also the G&A base amount and resulting G&A rate.

The Impact Analysis tool automatically computes these cascading effects. The result table includes a notation showing the G&A base adjustment amount and direction. This behavior is consistent with the circular dependency resolution implemented in the ICP Dashboard’s schedule generation pipeline (see ICE Model Reference, step 9b of recalculateAllSchedules).

NOTE: Under Single Element (Direct Labor) base methodology, there are no cascading G&A base effects, because the Direct Labor base is independent of overhead pool composition. The Impact Analysis tool correctly omits cascading adjustments when Single Element is the active base type.

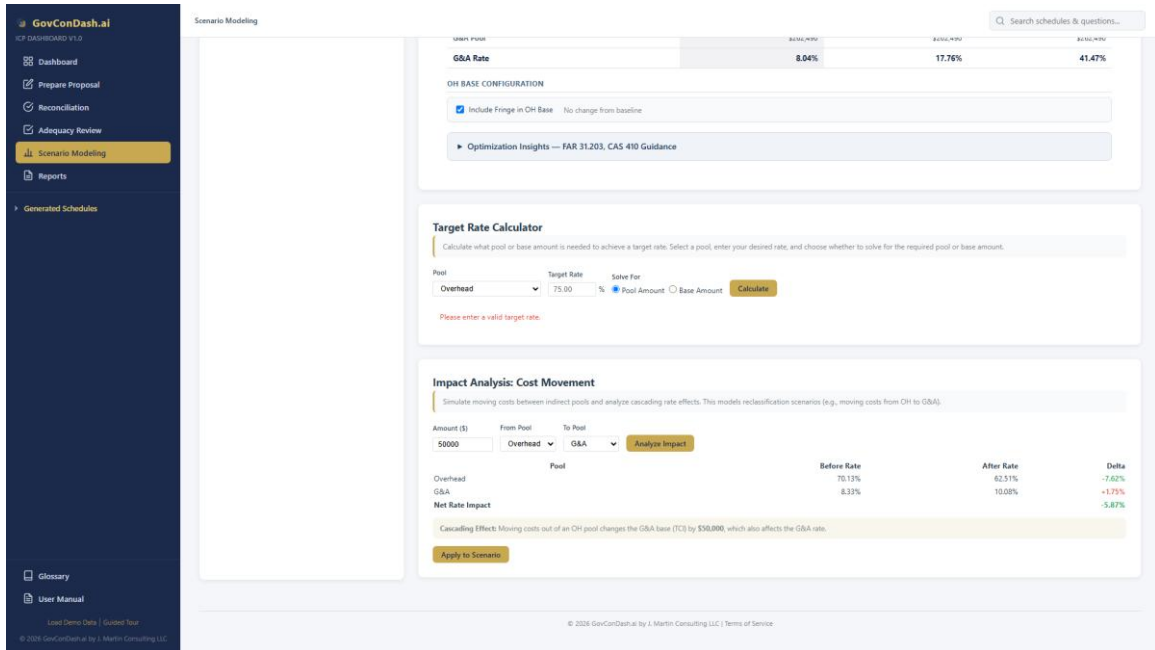


Figure 11: Impact analysis result showing before/after rates with cascading G&A base adjustment

Section 7: Base Change Justification Analysis

7.1 Regulatory Context

When a contractor determines that a change in G&A allocation base would produce a more equitable distribution of indirect costs, CAS 410-50(d) and FAR 31.203(e) require documented justification. The Base Change Analysis tab provides four complementary statistical methods to support the evidentiary basis for a proposed base change.

This analysis is accessed by clicking the “Base Change Analysis” tab at the top of the Scenario Modeling page. It is designed to produce documentation suitable for inclusion in a CAS cost impact proposal (FAR 30.604) or a rate negotiation package for the Administrative Contracting Officer (ACO).

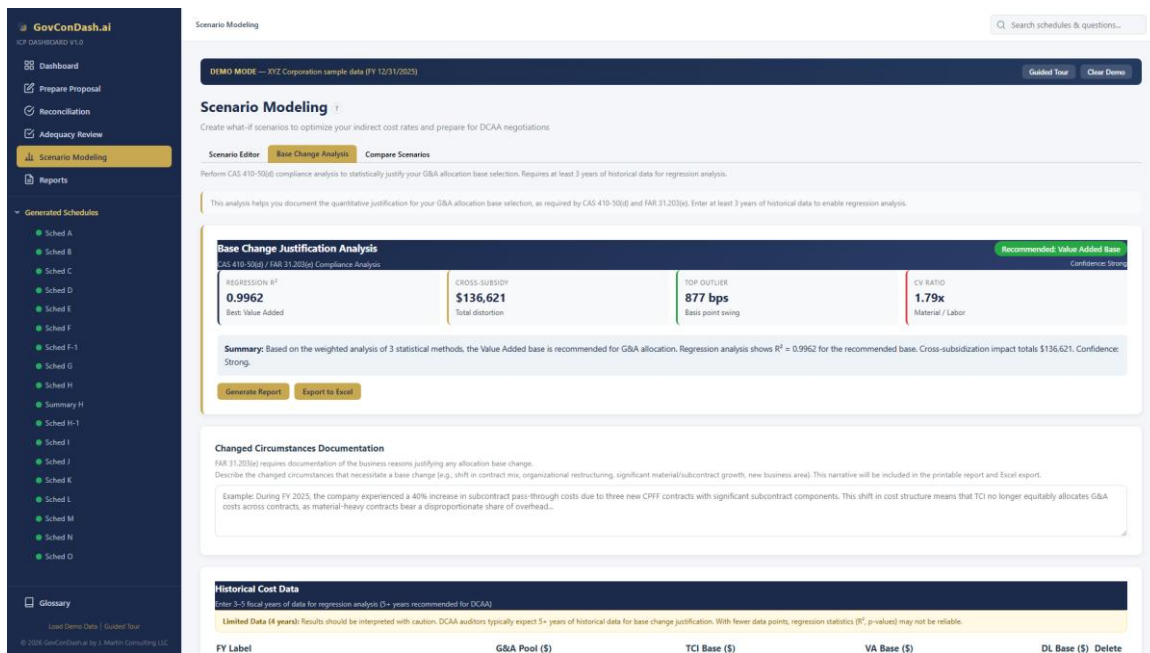


Figure 12: Base Change Justification Analysis — overview with summary card and analysis panels

7.2 Historical Data Input

The regression analysis requires multi-year historical data. For each fiscal year in the analysis period, the following data points are required:

Field	Units	Description
Fiscal Year Label	Text	Fiscal year identifier, e.g., “FY 2025” or “12/31/2025”
G&A Pool	Dollars	Total G&A indirect cost pool for the fiscal year (Schedule B grand total)
TCI Base	Dollars	Total Cost Input allocation base (Schedule E G&A section total)
Value Added Base	Dollars	TCI minus direct material and subcontract costs
Direct Labor Base	Dollars	Total direct labor dollars (Schedule E direct labor component)

Data may be entered manually, imported from prior-year ICE Model workbooks (.xslm files), or auto-populated from the current year’s generated schedules. A minimum of three fiscal years is required to perform regression analysis. DCAA guidance generally considers five or more years as providing strong statistical evidence.

NOTE: When fewer than four data points are available, the system displays a sample size warning. Results from small-sample regressions should be interpreted with appropriate caution,

as confidence intervals widen significantly and p-values may not reach standard significance thresholds.

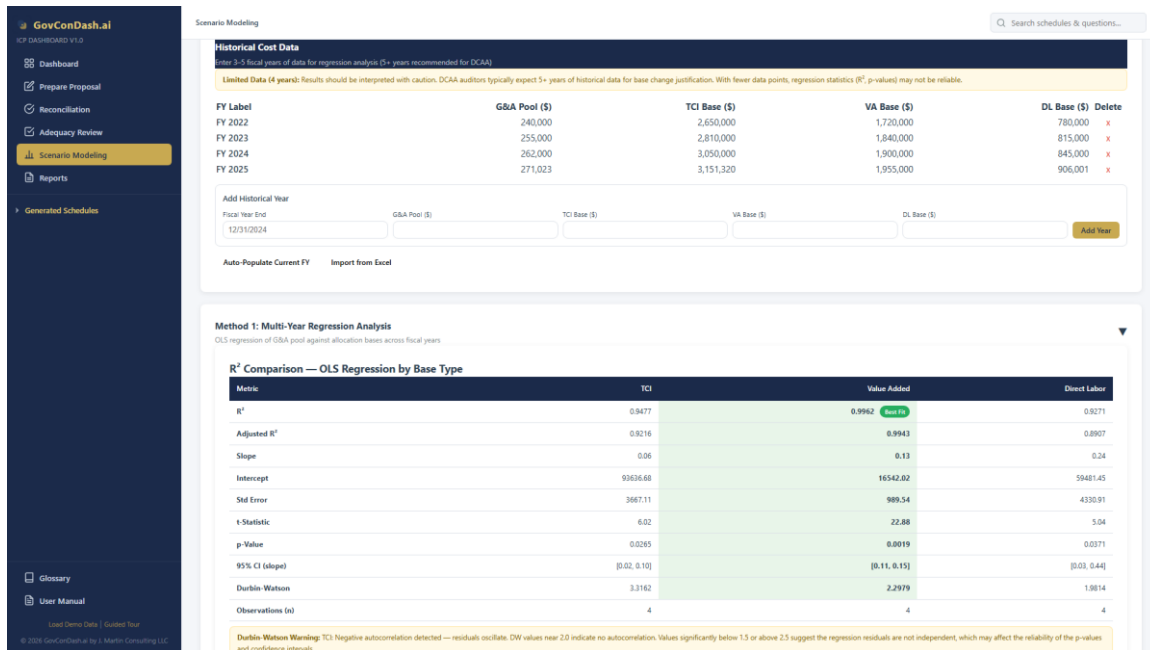


Figure 13: Historical data entry form with fiscal year entries and import options

7.3 Changed Circumstances Documentation

FAR 31.203(e) permits revision of allocation methods when “changed circumstances” warrant reassessment. The Changed Circumstances text area provides a structured location to document the business, organizational, or contractual changes motivating the proposed base change. Examples include significant growth in subcontract spending, acquisition or divestiture of business units, shifts in contract type mix, or changes in cost element composition.

This narrative is included in all exported reports and Excel workbooks, providing a complete audit trail.

7.4 Method 1: Multi-Year Regression Analysis (OLS)

The primary analytical method is Ordinary Least Squares (OLS) linear regression, applied three times—once for each candidate base type—with the G&A pool as the dependent variable (Y) and the allocation base as the independent variable (X).

7.4.1 Model Specification

The regression model estimates the linear relationship: $Y = \alpha + \beta X + \epsilon$

where Y is the G&A pool amount, X is the allocation base amount (TCI, Value Added, or Direct Labor), α is the intercept, β is the slope coefficient, and ϵ is the error term. The OLS estimator minimizes the sum of squared residuals $\sum(Y_i - \hat{Y}_i)^2$.

7.4.2 Statistical Output

For each regression, the system reports the following statistics:

Statistic	Symbol	Interpretation
Coefficient of Determination	R ²	Proportion of variance in the G&A pool explained by the allocation base. Range: 0–1. Values > 0.90 indicate strong explanatory power; 0.70–0.90 moderate; < 0.70 weak.

Statistic	Symbol	Interpretation
Adjusted R ²	\bar{R}^2	R ² adjusted for degrees of freedom. Penalizes for small sample sizes, providing a more conservative fit estimate. Particularly important when n < 10.
Standard Error	SE	Standard deviation of the residuals. Measures the average magnitude of prediction errors in dollars.
t-Statistic	t	Test statistic for the null hypothesis that the slope coefficient $\beta = 0$. Computed as $\beta / SE(\beta)$.
p-Value	p	Probability of observing the t-statistic under the null hypothesis. Values < 0.05 indicate statistical significance at the 95% confidence level; < 0.10 at the 90% level.
Confidence Interval (95%)	CI	Interval within which the true slope parameter β falls with 95% probability. Computed using the Student's t-distribution with n-2 degrees of freedom.

7.4.3 Scatter Plot Visualization

Three scatter plots are rendered on HTML5 Canvas elements (one per base type), each displaying the data points, the OLS regression line, 95% confidence bands, the R² annotation, and outlier identification. Data points exceeding 2× the standard error from the regression line are flagged as potential outliers.

For print reports, the Canvas elements are converted to PNG images via the toDataURL API. Canvas rendering is deferred via setTimeout to ensure DOM availability.

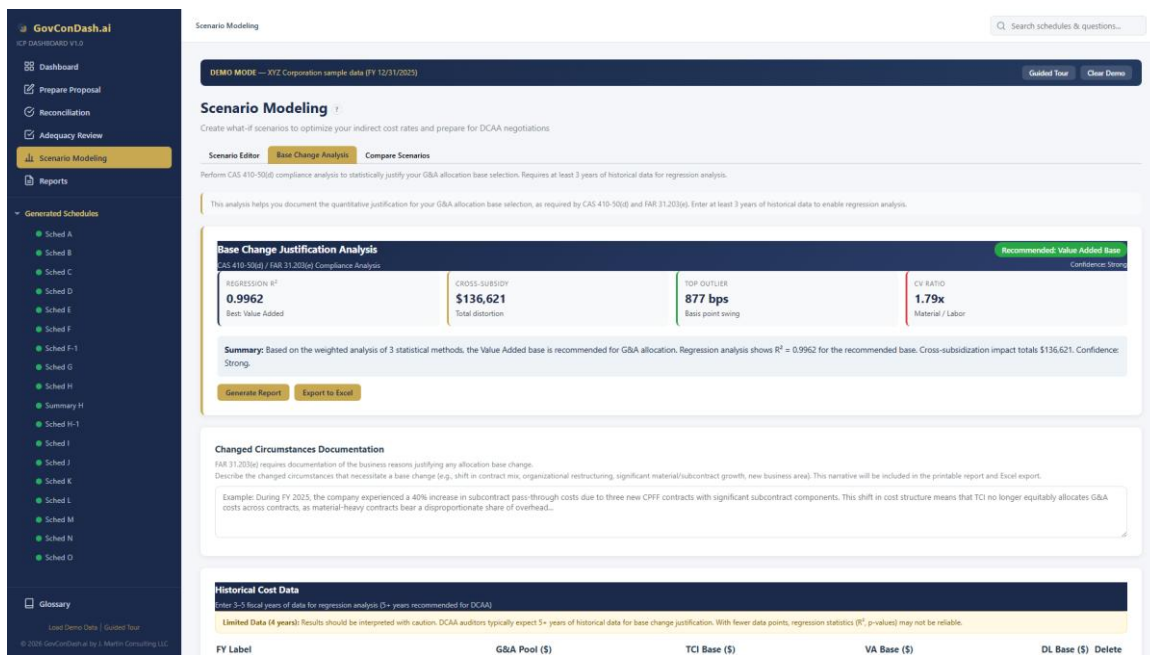


Figure 14: OLS regression scatter plots for TCI, Value Added, and Direct Labor vs. G&A Pool

7.4.4 Assumptions and Limitations

OLS regression assumes linearity (the relationship between base and pool is linear), homoscedasticity (constant variance of residuals), independence of observations (no autocorrelation between fiscal years), and normality of residuals. With the small sample sizes typical of base change analyses (3–8 fiscal years), formal tests for these assumptions have limited power. The p-value calculation uses the Abramowitz & Stegun approximation for the Student's t cumulative distribution function.

NOTE: The regression results should be interpreted as one component of a multi-method evidentiary framework, not as a standalone basis for a base change decision. DCAA auditors will evaluate the totality of the evidence, including the changed circumstances narrative, rate impact analysis, and sensitivity findings.

7.5 Method 2: Comparative Rate Impact Analysis

This method evaluates the contract-level impact of alternative G&A bases by computing the G&A rate, allocation base, and allocated G&A amount for each active contract under each of the three base methodologies. The analysis identifies:

Cross-Subsidization: Contracts where the allocated G&A amount would increase or decrease under a different base type. The total absolute cross-subsidization amount quantifies the aggregate dollar magnitude of allocation distortion.

CAS 410-50(d)(3) Threshold: If direct labor constitutes less than 15% of TCI, the system flags that Single Element (DL) may not satisfy the “significant portion” requirement.

The analysis reads contract cost data from Schedule H and Summary Schedule H, applying each base type’s G&A rate to each contract’s appropriate base amount.

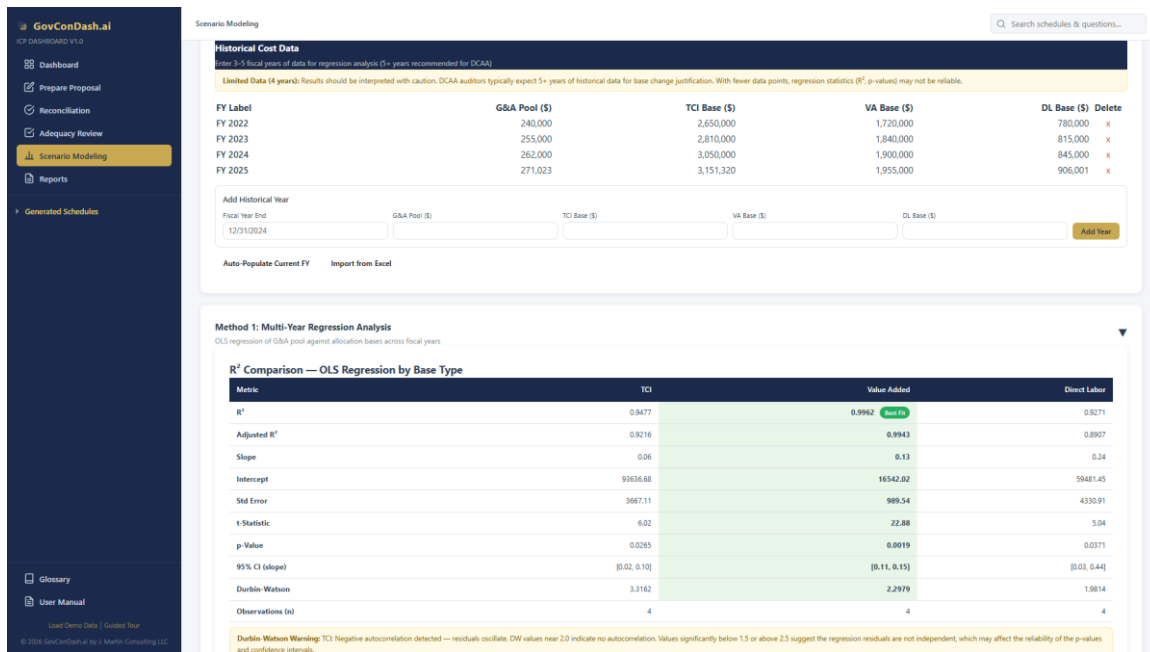


Figure 15: Comparative Rate Impact Analysis — contract-level G&A allocation under each base type

7.6 Method 3: Sensitivity and Outlier Analysis

The sensitivity analysis examines the concentration and variability of cost elements across the contract portfolio to assess whether specific contracts or cost categories create allocation distortion:

Metric	Purpose
Pareto Concentration	Measures what percentage of total material and subcontract costs is concentrated in the top contracts. High concentration suggests that pass-through costs may distort G&A allocation under a TCI base.
Herfindahl Index	A market-concentration metric (0–1) applied to cost distribution. Higher values indicate greater concentration. Values above 0.25 suggest significant concentration in a small number of contracts.
Coefficient of Variation	Standard deviation divided by the mean for G&A rates under each base type. Lower CV indicates more consistent rate allocation across contracts. The base type with the lowest CV produces the most stable rates.
Rate Stability Ranking	Composite ranking based on CV, Pareto concentration, and sensitivity to contract portfolio changes. The highest-ranked base type is most resistant to year-over-year fluctuation.

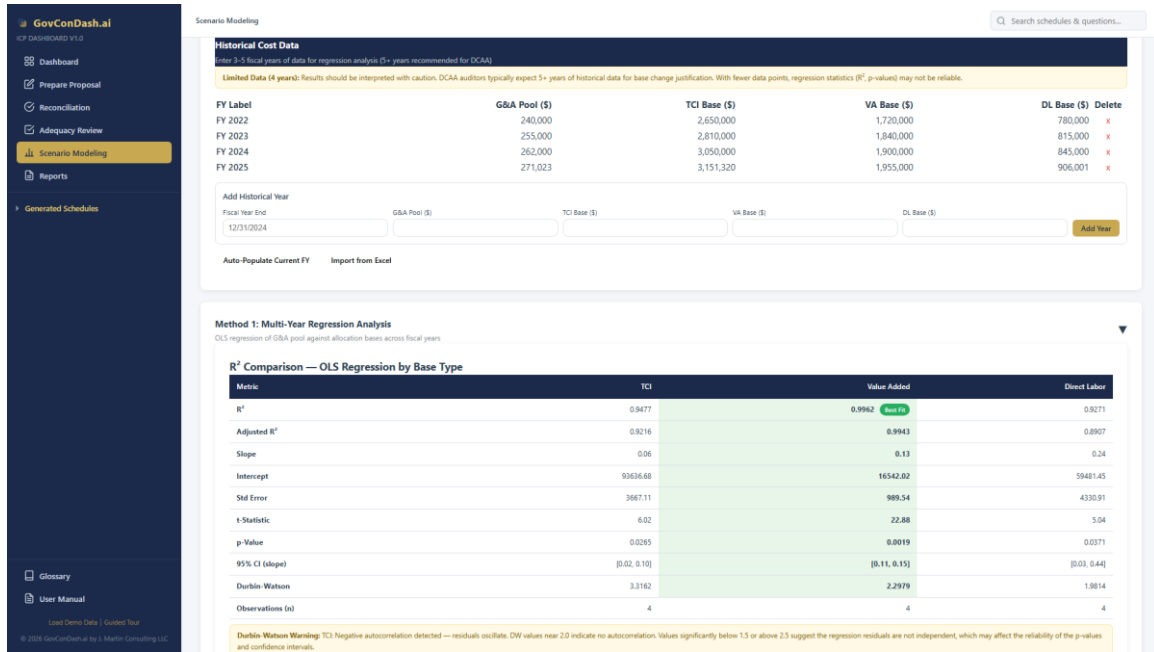


Figure 16: Sensitivity and Outlier Analysis — Pareto concentration and CV comparison

7.7 Aggregate Recommendation

The system aggregates findings from the three methods using a weighted scoring model. Each method contributes its recommended base type, and the overall recommendation reflects the consensus:

Confidence Level	Criteria	Implication
Strong	All three methods recommend the same base type	Evidence is consistent across methodologies. Strongest basis for a base change proposal.
Moderate	Two of three methods agree on a recommendation	Preponderance of evidence supports the change. Conflicting method should be addressed in the narrative.
Weak	All three methods recommend different base types	Mixed evidence. Additional analysis or professional judgment required. May not support a formal base change request.

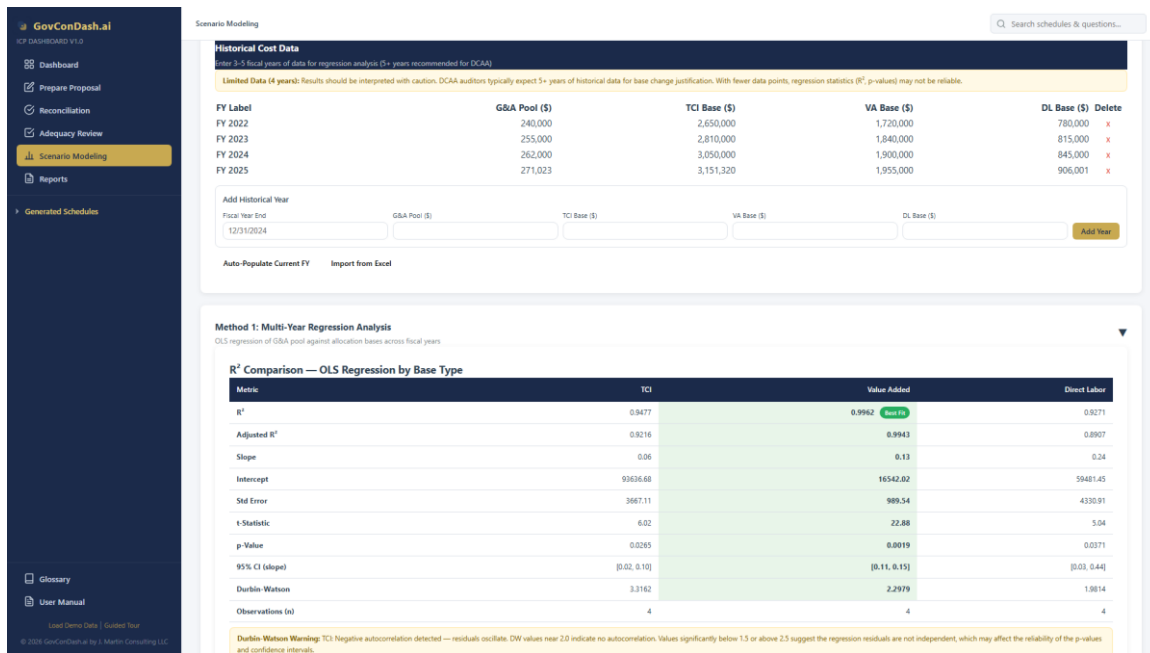


Figure 17: Aggregate recommendation with confidence level and summary metrics

NOTE: The analytical output is intended to support—not replace—professional judgment. All base change proposals should be reviewed by qualified cost accounting professionals and coordinated with the ACO and DCAA auditor prior to implementation.

Section 8: Scenario Comparison

8.1 Overview

The Compare Scenarios tab enables side-by-side evaluation of up to three scenarios against the baseline rate structure. This facilitates decision-making when multiple alternative rate structures are under consideration.

8.2 Selection and Display

Select scenarios using the checkbox controls. The baseline is always included as the reference column. The comparison table displays the following for each indirect cost pool:

Rate: The computed indirect cost rate with the delta from baseline in smaller text.

Pool Amount: The indirect cost pool dollar amount with signed delta.

Base Amount: The allocation base dollar amount with signed delta.

If the selected scenarios use different G&A base types (e.g., one uses TCI while another uses Value Added), a warning row indicates that the rates reflect different methodologies and are not directly comparable in absolute terms.

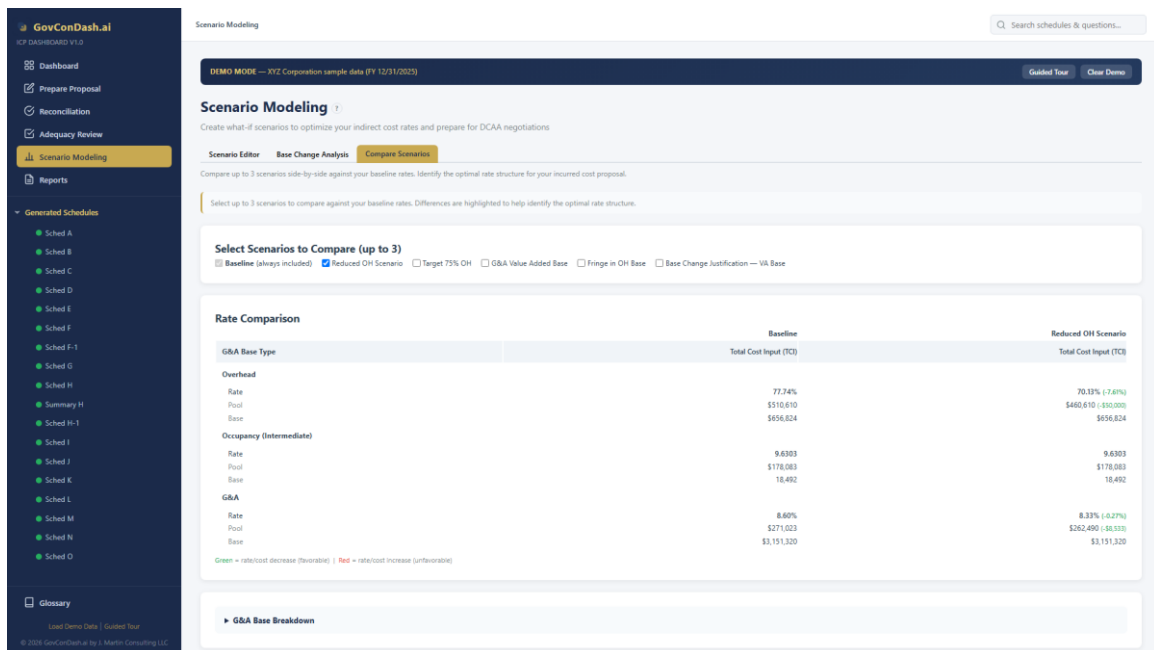


Figure 18: Side-by-side scenario comparison with baseline and delta highlighting

8.3 G&A Base Breakdown

An expandable G&A Base Breakdown section provides a detailed view of which cost elements are included in each scenario's G&A allocation base. This is particularly useful when comparing scenarios with different base types, as it makes explicit which cost elements are included or excluded under each methodology.

The screenshot displays the 'Scenario Modeling' section of the GovConDash.ai dashboard. It features a sidebar with navigation options like 'Dashboard', 'Prepare Proposal', 'Reconciliation', 'Adequacy Review', 'Scenario Modeling', 'Reports', and 'Generated Schedules'. The main content area is titled 'Scenario Modeling' and includes a search bar and instructions to compare up to 3 scenarios. A 'Select Scenarios to Compare (up to 3)' section shows three scenarios selected: 'Baseline (always included)', 'Reduced OH Scenario', and 'Target 75% OH'. Below this is a 'Rate Comparison' table.

G&A Base Type	Baseline	Reduced OH Scenario	Target 75% OH
	Total Cost Input (TCI)	Total Cost Input (TCI)	Total Cost Input (TCI)
Overhead			
Rate	77.74%	70.33% (-7.61%)	75.00% (-2.74%)
Pool	\$510,610	\$460,610 (-\$50,000)	\$492,610 (-\$17,990)
Base	\$656,824	\$656,824	\$656,824
Occupancy (Intermediate)			
Rate	9.6303	9.6303	9.6303
Pool	\$178,083	\$178,083	\$178,083
Base	18,492	18,492	18,492
G&A			
Rate	8.60%	8.33% (-2.7%)	8.60%
Pool	\$271,023	\$262,490 (-\$8,533)	\$271,023
Base	\$3,151,320	\$3,151,320	\$3,151,320

Legend: Green = rate/cost decrease (favorable) | Red = rate/cost increase (unfavorable)

Additional sections visible include 'G&A Base Breakdown' and 'Contract Level Impact'.

Figure 19: G&A base breakdown showing cost element inclusion across scenarios

Section 9: Reporting and Export

9.1 Scenario Analysis Report

The “Generate Report” function produces a formatted, printable report containing: an executive summary with key rate metrics, a complete rate comparison table (baseline vs. adjusted), a CAS 410 base analysis section with formula breakdown and compliance notes, and a cost breakdown detail. The report is rendered in a browser view formatted for PDF output via the browser Print function.

Scenario Modeling

Current G&A base type: Total Cost Input (TCI).

Cost Element	TCI Base	Value Added	Single (DL)
Direct Labor	\$633,012	\$633,012	\$633,012
Direct Material	\$842,981	—	—
Subcontracts	\$944,841	—	—
Direct Travel	\$34,563	\$34,563	—
Other Direct Costs	\$172,105	\$172,105	—
Fringe Applied	\$0	\$0	—
OH Applied	\$510,615	\$510,615	—
Intermediate Applied	\$178,083	\$178,083	—
G&A Base	\$3,266,200	\$1,478,378	\$633,012
G&A Pool	\$262,490	\$262,490	\$262,490
G&A Rate	8.04%	17.76%	41.47%

OH Base Configuration: Fringe is included in the OH base.

Cost Breakdown

Cost Element	Amount
Direct Labor	\$633,012
Direct Material	\$842,981
Subcontracts	\$944,841
Direct Travel	\$34,563
Other Direct Costs	\$172,105
Total Direct Costs	\$2,627,502
Fringe Applied	\$0
OH Applied	\$510,615
Intermediate Applied	\$178,083
Total Cost Input	\$3,316,200

Scenario Analysis Report — Reduced OH Scenario — XYZ Corporation — Generated by ICP Dashboard

Figure 20: Formatted scenario analysis report — printable view

9.2 Scenario Excel Export

The “Export to Excel” function downloads a multi-sheet .xlsx workbook via the SheetJS library. The workbook includes a Summary sheet with scenario metadata and rate overview, a Rate Comparison sheet with before/after data, and a Base Analysis Detail sheet with cost element breakdowns. Number formatting follows ICE Model conventions: #,##0 for currency, 0.00% for rates, 0.00000 for COM factors. Header rows use navy backgrounds with white text; data rows alternate between white and light gray.

9.3 Base Change Justification Export

The Base Change Analysis tab provides two export options:

Generate Report: A printable report containing the executive summary, all three analysis panels (regression, rate impact, sensitivity), scatter plot images, the changed circumstances narrative, and regulatory citations. Suitable for inclusion in a rate negotiation package or CAS cost impact proposal.

Export to Excel: A six-sheet .xlsx workbook containing: (1) Summary with recommendation and confidence level, (2) Regression analysis with statistical output for all three base types, (3) Rate Impact with per-contract allocation comparisons, (4) Sensitivity with concentration and CV metrics, (5) Cost Impact with aggregate dollar effects, and (6) Regulatory References with applicable FAR and CAS citations. This workbook format is designed for submission to the ACO and DCAA as supporting documentation for a proposed base change.

Appendix A: FAR/CAS Regulatory Reference

The following table summarizes the key regulatory provisions applicable to indirect cost allocation base selection, rate determination, and cost accounting practice changes.

Reference	Topic	Description
FAR 31.203(b)	Consistency	Once established, the allocation method for a given indirect cost pool must be applied consistently across cost accounting periods unless changed circumstances warrant revision.
FAR 31.203(c)	Beneficial/Causal Relationship	The allocation base must reflect a beneficial or causal relationship between the indirect cost pool and the final cost objectives receiving the allocation.
FAR 31.203(d)	Anti-Fragmentation	A contractor may not fragment an allocation base to exclude cost elements from bearing their equitable share of indirect costs. Once elements are removed (e.g., material and subcontracts under Value Added), remaining elements must stay in the base.
FAR 31.203(e)	Revision of Allocation Methods	Changed circumstances—including shifts in business volume, contract mix, organizational structure, or cost element composition—may warrant revision of allocation methods. The contractor bears the burden of documenting the changed circumstances and demonstrating that the revised method is more equitable.
FAR 31.203(g)	Base Period	The cost accounting period for indirect cost allocation is the contractor's fiscal year, consistent with CAS 406.
CAS 410-50(d)(1)	TCI Base (Preferred)	The G&A base should represent the total activity of the business unit. Total Cost Input is the broadest measure and is established as the preferred methodology.
CAS 410-50(d)(2)	Distortion Test	Cost elements may be excluded from the G&A base only if their inclusion would produce a significantly different allocation from that which would result from a base reflecting total activity. This is the basis for the Value Added methodology.
CAS 410-50(d)(3)	Insignificant Element Test	A single cost element may be used as the base only if it represents a significant portion of the total cost of the business unit. If direct labor is used, it must constitute a demonstrably significant share of TCI.
CAS 418-50	Homogeneous Cost Pools	Indirect costs must be accumulated in homogeneous cost pools that permit allocation to final cost objectives using a base that reflects the beneficial or causal relationship.
FAR 30.604	Cost Impact (GDM) Proposal	A cost accounting practice change requires the contractor to submit a General Dollar Magnitude proposal quantifying the cost impact to affected government contracts. Required for DS-1 amendments.
FAR 42.703	Final Indirect Cost Rates	The Contracting Officer establishes final indirect cost rates based on the contractor's ICP and DCAA audit findings. Timely submission prevents unilateral rate determination under FAR 42.703-2.

Appendix B: Statistical Methods Reference

This appendix provides technical details on the statistical methods used in the Base Change Justification Analysis module.

B.1 Ordinary Least Squares Regression

The OLS estimators for the simple linear regression $Y = \alpha + \beta X$ are computed as:

$$\hat{\beta} = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sum (X_i - \bar{X})^2}$$

$$\hat{\alpha} = \bar{Y} - \hat{\beta}\bar{X}$$

where \bar{X} and \bar{Y} are the sample means. The coefficient of determination $R^2 = 1 - (SS_{\text{res}} / SS_{\text{tot}})$, where $SS_{\text{res}} = \sum (Y_i - \hat{Y}_i)^2$ and $SS_{\text{tot}} = \sum (Y_i - \bar{Y})^2$. Adjusted $R^2 = 1 - [(1 - R^2)(n - 1) / (n - 2)]$.

The standard error of the estimate $SE = \sqrt{SS_{\text{res}} / (n - 2)}$. The t-statistic for the slope is $t = \hat{\beta} / SE(\hat{\beta})$, where $SE(\hat{\beta}) = SE / \sqrt{\sum (X_i - \bar{X})^2}$. The p-value is computed using the Student's t-distribution with $n - 2$ degrees of freedom, approximated via the Abramowitz & Stegun rational approximation for the cumulative normal distribution.

B.2 Confidence Intervals

The 95% confidence interval for the slope is $\hat{\beta} \pm t_{\alpha/2, n-2} \times SE(\hat{\beta})$, where $t_{\alpha/2, n-2}$ is the critical value from the Student's t-distribution at the 2.5% tail with $n - 2$ degrees of freedom. For small samples ($n < 10$), this interval may be quite wide, reflecting the limited information available.

B.3 Outlier Detection

Data points with residuals exceeding $2 \times$ the standard error of the estimate are flagged as potential outliers in the scatter plots. Outlier identification is informational; the OLS regression includes all data points. In small samples, influential observations can significantly affect the slope and R^2 values. Users should evaluate whether outlier years represent anomalous business conditions or data quality issues.

B.4 Herfindahl-Hirschman Index (HHI)

The HHI is computed as the sum of squared market shares: $HHI = \sum (s_i)^2$, where s_i is the proportion of total material and subcontract costs attributable to contract i . The index ranges from $1/n$ (perfectly equal distribution) to 1.0 (complete concentration in one contract). Values above 0.25 indicate high concentration.

B.5 Coefficient of Variation

The coefficient of variation $CV = \sigma / \mu$, where σ is the standard deviation and μ is the mean of the per-contract G&A rates under a given base type. Lower CV values indicate more consistent rate allocation across contracts. The base type producing the lowest CV is considered the most stable allocation methodology.

B.6 Weighted Scoring Model

The aggregate recommendation is produced by a weighted scoring model that considers: (1) R^2 ranking from the regression analysis (highest R^2 preferred, with statistical significance as a qualifying threshold), (2) cross-subsidization magnitude from the rate impact analysis (lowest total distortion preferred), and (3) CV ranking from the sensitivity analysis (lowest CV preferred). The confidence level reflects the degree of consensus across methods, not the absolute strength of any individual method.

Appendix C: Glossary of Terms

Term	Definition
ACO	Administrative Contracting Officer. The government official responsible for administering indirect cost rate agreements and CAS compliance.
Allocation Base	The denominator in an indirect cost rate calculation. Represents the activity measure used to distribute indirect costs to final cost objectives.
CAS	Cost Accounting Standards. A set of 19 standards (CAS 401–418) governing cost accounting practices for government contracts.
Cross-Subsidization	A condition where the choice of allocation base causes some contracts to absorb a disproportionate share of indirect costs relative to the benefits received.
DCAA	Defense Contract Audit Agency. The federal agency responsible for auditing Department of Defense contractor incurred cost proposals.
DS-1	Disclosure Statement. A formal document filed with the government describing the contractor’s cost accounting practices. Amendments are required when practices change.
G&A	General and Administrative expenses. The broadest indirect cost pool, encompassing overhead costs that benefit the entire business unit.
GDM	General Dollar Magnitude proposal. A cost impact estimate required under FAR 30.604 when a CAS-covered contractor changes a disclosed cost accounting practice.
ICP	Incurred Cost Proposal. The annual submission required under FAR 52.216-7 reconciling actual indirect costs against provisional billing rates.
ICE Model	Incurred Cost Electronically (ICE) Model. DCAA’s standardized Excel workbook format (version 2.0.1h) containing 43 worksheets for ICP submission.
OLS	Ordinary Least Squares. A statistical method for estimating the parameters of a linear regression model by minimizing the sum of squared residuals.
R-squared (R²)	Coefficient of determination. A statistical measure (0–1) indicating the proportion of variance in the dependent variable explained by the independent variable.
Single Element	An allocation base consisting of a single cost element (typically direct labor dollars). Requires demonstration that the element is a significant portion of total costs per CAS 410-50(d)(3).
TCI	Total Cost Input. The most inclusive G&A allocation base, including all direct costs, applied fringe, applied overhead, and intermediate pool allocations.
Value Added	A G&A allocation base that excludes direct material and subcontract costs from TCI. Intended to remove pass-through cost distortion per CAS 410-50(d)(2).

Disclaimer

The ICP Dashboard Scenario Modeling module is provided as an analytical tool to assist government contractors in evaluating alternative indirect cost rate structures and documenting base change justifications. It is not a substitute for professional cost accounting, legal, or regulatory advice.

The statistical methods implemented in the Base Change Justification Analysis (OLS regression, rate impact analysis, sensitivity analysis) are standard analytical techniques applied to contractor-provided data. The quality and reliability of the output depends on the accuracy, completeness, and representativeness of the input data. Small sample sizes (fewer than five fiscal years) may produce unreliable statistical results.

Users are responsible for verifying all analytical results, consulting qualified cost accounting professionals, and coordinating proposed changes with the Administrative Contracting Officer and DCAA auditor prior to implementation. The regulatory references contained in this guide are provided for informational purposes and may not reflect the most current amendments.

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— End of Guide —