



Cohort Cash-Flow Model Maintenance Across 750+ Models

PROBLEM STATEMENT

RD-FO maintains cohort accounting for every program × every cohort year from FY 1992 forward — approximately 750+ cohort models touched annually — and each model requires actuals refresh, curve recalibration, narrative assumption documentation, and audit-trail continuity. With staff contraction, the per-model time budget is shrinking faster than the cohort population.

WHY IT MATTERS

Cohort cash-flow models are the foundation of every FCRA deliverable: subsidy rate, re-estimate, modification, financing account interest, and OMB Credit Supplement. Model staleness or undocumented assumption changes drive OIG and GAO criticism (e.g., GAO-AIMD-97-145).

HSG'S APPROACH

1. Inventory the entire cohort model library and rank by materiality (\$60M material variance threshold; \$40M / 5% abnormal activity threshold) so engineering effort lands on highest-impact cohorts.
2. Convert legacy Excel cash-flow models into a versioned, parameterized framework in Python / R / SAS with input lineage from FMML, NFAOC, BICS, and CSC.
3. Use AI tooling to surface candidate assumption-drift events (default rate, prepayment, recovery, interest rate) and queue for analyst review with a recommended adjustment and draft narrative.
4. Apply A-11 §185 risk category groupings within cohorts so models with measurable risk-driver heterogeneity are stratified appropriately.
5. Document everything to A-123 internal-control standards with model-risk-management discipline aligned to SR 11-7 / OCC 2011-12.

EXPECTED DELIVERABLES

- Cohort model inventory with materiality ranking
- Versioned cohort cash-flow model framework with documented input lineage
- Assumption-drift surveillance dashboard
- Risk-category stratification documentation per A-11 §185
- Model risk management package (development, validation, back-testing, peer review, sensitivity)

EXPECTED OUTCOME

Reduce per-model annual maintenance time by 40% while improving model documentation quality to a clean A-123 internal-control posture.

ENGAGEMENT TEAM

PRIMARY LEAD

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