Fatboy Software Financial Planner

Technical Overview

The Fatboy Software Financial Planner is a retirement analysis tool built around a modular forward-simulation engine designed to evaluate retirement sustainability under explicit assumptions.

The system was developed to provide an analytical framework comparable to professional retirement planning models while remaining transparent and reproducible.

Modeling Architecture

The projection engine separates major modeling components into independent modules:

• Return generation
• Cashflow aggregation
• Withdrawal sequencing
• Tax computation
• Required Minimum Distribution logic
• Success evaluation

This architecture allows scenario comparisons to be performed using isolated input clones while maintaining deterministic behavior under controlled benchmarking conditions.

Return Modeling

Seven return-generation methodologies are implemented, including:

• Geometric Brownian Motion
• Multi-state Markov regime models
• Stress-weighted conservative regimes
• Explicit crash/recovery scenarios
• Empirical block-bootstrap models using historical data

Across all models, inflation is deterministic and user-specified.

Reproducible Monte Carlo Benchmarking

The system includes a deterministic **Benchmark Mode** which fixes the Monte Carlo seed and reuses identical return paths across scenarios.

This enables controlled comparisons such as:

- withdrawal rate sensitivity
- tax treatment effects
- alternative success definitions

Benchmark results presented in the white paper use:

- 1,000 simulations
- canonical seed 12345
- historical full bootstrap return model

Validation Results

Controlled benchmarks demonstrate consistent economic behavior:

- Higher withdrawal rates reduce median terminal wealth
- Tax treatment materially impacts sustainability
- Success definitions significantly affect reported outcomes

These results confirm consistent integration of withdrawal mechanics, tax modeling, and return sequencing.

Limitations

The model intentionally avoids optimization and focuses on forward simulation under explicit assumptions.

Current limitations include:

- deterministic inflation
- fixed time horizon (no mortality modeling)
- static asset allocation unless modified by user events

Objective

The goal of the framework is disciplined analysis rather than prediction.

By isolating assumptions and providing reproducible simulation environments, the tool allows users to understand how retirement outcomes respond to specific economic inputs.