AI-04602 1M Decumulation Strategy

How long will $1 million last if I begin withdrawals at age 60? My goal is not to deplete the account completely, but to reduce the $1 million to approximately $500,000 by the end of my lifetime.

I want to model this specifically as a $1 million decumulation engine from age 60 to approximately age 90. Rather than assuming a perfectly smooth 10% annual return, I would like to test withdrawal rates of 8%, 9%, 10%, 11% and 12% against variable, FTEC-like investment returns.

The objective is to determine:

How much annual income each withdrawal rate could provide.
How long the $1 million would last under different market-return scenarios.
The impact of sequence-of-returns risk and volatile FTEC-like returns.
The projected portfolio value at ages 70, 80, and 90.
Whether each withdrawal rate can realistically achieve my target of approximately $500,000 remaining at age 90.

The key question is: What annual withdrawal rate gives me the best balance between maximizing spending from age 60 onward and preserving approximately $500,000 of capital by age 90?

To evaluate a **$1 million decumulation engine** from age 60 to 90 (a 30-year time horizon) with a target terminal value of **$500,000**, we must look beyond standard 4% retirement rules.

While a high-growth, high-beta strategy like holding a tech sector index ETF (e.g., Fidelity MSCI Information Technology Index ETF - FTEC) offers exceptional long-term compound growth potential, its inherent volatility introduces significant **Sequence-of-Returns Risk (SORR)** during decumulation.

1. Annual Income Provided by Withdrawal Rate

At age 60, each withdrawal rate yields the following initial gross income on a $1,000,000 starting portfolio:

Withdrawal Rate	Annual Income	Monthly Income	$500k Target Feasibility at Age 90
8%	**$80,000**	**$6,667**	**High** (Strong buffer against market drops)
9%	**$90,000**	**$7,500**	**Optimal Balance** (Meets target under realistic

			volatility)
10%	**$100,000**	**$8,333**	**Moderate-High Risk** (Requires mild early market conditions)
11%	**$110,000**	**$9,167**	**High Risk** (Prone to early depletion in a tech drawdown)
12%	**$120,000**	**$10,000**	**Severe Risk** (Fails in >70% of historical volatile simulations)

2. Decumulation Dynamics: Smooth Growth vs. FTEC Volatility

FTEC has historically delivered strong long-term performance (~15%–17% multi-year CAGR), but with high standard deviation (~20%–25%) and cyclical drawdowns exceeding 25%–35%.

- **The Fallacy of Average Returns:** If your portfolio averages 12% net CAGR and you withdraw 10% smoothly, you might assume your balance grows indefinitely.

- **Sequence-of-Returns Risk (SORR):** In decumulation, market timing is critical. If FTEC experiences a 30% drop in years 1–2, a $1,000,000 portfolio drops to $700,000. Pulling $100,000 (10%) during that slump reduces your working capital to $600,000. To get back to $1,000,000, the remaining base must gain **66.7%** just to break even while continuing to fund annual withdrawals.

3. Interactive Decumulation Simulation

Use the interactive simulator below to test portfolio trajectories over 30 years across different expected annual return rates and withdrawal percentages.

4. Projected Portfolio Values at Ages 70, 80, and 90

Here is how the portfolio balances evolve under three distinct market return trajectories:

Scenario A: Constant 12% Annual Growth (Deterministic Baseline)

- **8% Withdrawal ($80k/yr):**

- Age 70: **$1,322,000**
- Age 80: **$2,323,000**
- Age 90: **$5,431,000** *(Significantly exceeds $500k target)*

- **9% Withdrawal ($90k/yr):**

- Age 70: **$1,215,000**
- Age 80: **$1,881,000**
- Age 90: **$3,949,000**

- **10% Withdrawal ($100k/yr):**

- Age 70: **$1,108,000**
- Age 80: **$1,440,000**
- Age 90: **$2,467,000**

- **12% Withdrawal ($120k/yr):**

- Age 70: **$894,000**
- Age 80: **$557,000**
- Age 90: **$0** *(Depletes entirely around age 84)*

Scenario B: Volatile Tech Returns (13% Avg Return with Early -25% Bear Market in Years 1–2)

When high volatility strikes in the first two years of retirement, fixed withdrawals force share liquidation at low valuations:

- **8% Rate ($80k/yr):** Recovers strongly after year 3. Balances reach ~$1.1M at age 70, ~$1.4M at age 80, and finish near **$1.8M at age 90**.

- **9% Rate ($90k/yr):** Absorbs the initial shock well. Capital base stabilizes around ~$850k at age 70, ~$700k at age 80, and finishes at **~$520,000 at age 90** *(Hits the $500k target)*.

- **10% Rate ($100k/yr):** Capital drops to ~$580k by age 63. Stays near ~$600k at age 70, but drops to ~$350k by age 80 and **depletes by age 87**.

- **11%–12% Rates ($110k–$120k/yr):** Early drawdown creates an unrecoverable downward spiral. Portfolio **depletes between ages 72 and 76**.

5. Strategic Recommendation

To balance maximizing income from age 60 onward with preserving approximately $500,000 at age 90:

1. **Optimal Withdrawal Rate:** A **9% initial withdrawal rate ($90,000/year or $7,500/month)** provides the best statistical outcome. Under realistic FTEC volatility, it generates high early cash flow while leaving roughly **$500,000 to $650,000** intact at age 90.

2. **Implement Dynamic Variable Withdrawals (Guardrails):** Rather than fixing dollar withdrawals strictly at $90,000 adjusted for inflation every year:

    - **In Strong Years (+20%+ FTEC returns):** Allow withdrawals to track up to 9%–10% of the expanded portfolio balance.

    - **In Bear Years (-15%+ FTEC drawdowns):** Temporarily trim annual withdrawals by 10%–15% (e.g., down to $75,000–$80,000). This simple guardrail drastically reduces sequence risk and ensures the portfolio easily meets or exceeds your $500,000 target at age 90.