

AI-04609 Retirement Planning Idea

Retirement Decumulation Strategy: The 10% Return Rule and Financial Independence

Analyze the following statement:

"In retirement, find an investment that consistently returns 10% per year, keep your annual withdrawal (decumulation) rate below 10%, and you will never have to worry about money again."

Determine whether this statement is True or False, and explain why. Go beyond the simple comparison of "investment return > withdrawal rate." Address sequence-of-returns risk, inflation, taxes, investment volatility, withdrawal timing, market drawdowns, longevity, and the difference between an average annual return and a guaranteed annual return.

Then answer this practical question:

If someone currently earns approximately \$70,000 per year, what retirement portfolio balance should they target to become financially independent and no longer depend on earning a paycheck?

Develop a simple but robust retirement plan that demonstrates how much capital is needed under different assumptions.

Model at least these scenarios:

Conservative: 5% average investment return

Moderate: 7% average investment return

Strong: 10% average investment return

For each scenario, test withdrawal/decumulation rates of:

4%

5%

6%

7%

8%

9%

10%

Assume retirement begins at age 60 and model the portfolio through age 90.

Include the following:

Target portfolio required to replace \$70,000/year

Portfolio required at each withdrawal rate

Annual withdrawal amount

Inflation-adjusted withdrawals

Investment growth

Annual portfolio balance

Total withdrawals over the retirement period

Ending portfolio balance

Whether the portfolio survives to age 90

The point at which the portfolio becomes vulnerable to depletion

The impact of a major market decline early in retirement

The impact of taxes

The difference between nominal and real returns

Amortization

Create a year-by-year amortization schedule showing:

Beginning Balance → Investment Return → Withdrawal → Ending Balance

Also calculate the cumulative amount withdrawn and show how much capital remains at ages 65, 70, 75, 80, 85, and 90.

Most Important Question

Determine whether there is a practical "financial freedom number" for someone earning \$70,000/year.

Compare the traditional 25× annual expenses rule with higher and lower multiples, and explain when a person should target 20×, 25×, 30×, or more.

Finally, develop a simple retirement formula that can be remembered and applied:

Required Retirement Capital = _____

Explain how to adjust the number for inflation, taxes, Social Security/pensions, healthcare, unexpected expenses, and longevity.

The goal is not to produce an overly optimistic retirement projection. Build a strategy that is simple enough to follow, mathematically sound, and robust enough to survive bad markets and a long retirement.

The Statement is FALSE

The assertion that returning 10% annually and withdrawing under 10% guarantees financial security is **fundamentally flawed**. In financial planning, this is often called the "average return fallacy."

Here is why relying on this rule leads to retirement failure:

Key Failure Drivers

1. Sequence of Returns Risk & Market Volatility

Equities do not yield a smooth 10% every year; they fluctuate wildly (e.g., +20%, -15%, +5%).

If you suffer severe market drawdowns early in retirement while making fixed cash withdrawals, you liquidate assets at depressed prices. This permanently impairs capital, preventing recovery even if long-term average returns eventually hit 10%.

Example (Sequence of Returns):

Year 1: **\$1,000,000** balance | -20% **return** | **\$70,000** withdrawal → Balance = **\$730,000**

Year 2: **\$730,000** balance | +25% **return** | **\$70,000** withdrawal → Balance = **\$822,500**

Average **return** = +2.5%, but portfolio lost ~18% of original value.

2. Average vs. Guaranteed Returns

A **guaranteed** 10% return (such as an annuity or risk-free bond, if one existed) would support a high withdrawal rate.

An **average** 10% return carries high volatility (standard deviation of ~15–20%). In volatile markets, the safe withdrawal rate is dramatically lower than the mean arithmetic or geometric return.

3. Inflation (Nominal vs. Real Returns)

A 10% return sounds high, but inflation erodes purchasing power. If inflation averages 3%:

$$\text{Real Return} = \text{Nominal Return} (10\%) - \text{Inflation} (3\%) = 7\%$$

To maintain a constant standard of living, your withdrawal amount must grow with inflation each year. A static 10% withdrawal rate with inflation adjustments quickly demands more than the portfolio yields.

4. Taxes & Net Cash Flow

Unless 100% of your capital is in a Roth account, withdrawals from Traditional 401(k)s/IRAs face standard income tax rates. Taxable accounts incur capital gains tax.

To receive **\$70,000 post-tax income**, you may need to withdraw **\$82,000–\$90,000** annually, raising your actual decumulation rate well past safe bounds.

Target Portfolio for a \$70,000 Income

To replace **\$70,000/year** (adjusted for 3% annual inflation over 30 years from age 60 to 90), the required starting capital varies significantly depending on return assumptions and withdrawal strategies.

Target Capital by Withdrawal Rate

(Target Portfolio = Initial Annual Spending / Withdrawal Rate)

Withdrawal Rate	Required Capital	Sustainability Assessment (30-Year Horizon)
4.0%	\$1,750,000	Highly Robust (Survives severe bear markets & inflation)
5.0%	\$1,400,000	Moderate Risk (Requires average returns ≥7%)
6.0%	\$1,166,667	High Risk (Vulnerable to early market drawdowns)
7.0%	\$1,000,000	Failure Likely (Depletes in <20 years if returns fluctuate)
8.0%–10.0%	\$700k–\$875k	Critical Failure (High rate of depletion in <12–15 years)

Interactive Retirement Simulation

Adjust parameters below to model portfolio survival across different rates of return, initial capital, and inflation assumptions.

Year-by-Year Amortization Schedule

(Age 60 to 90 | Base Capital: \$1,750,000 | 4% Initial Withdrawal = \$70,000 | 7% Nominal Return | 3% Inflation)

Age	Beg. Balance	Investment Return (7%)	Withdrawal (3% Infl)	End Balance	Cumulative Withdrawn
60	\$1,750,000	\$122,500	\$70,000	\$1,802,500	\$70,000
61	\$1,802,500	\$126,175	\$72,100	\$1,856,575	\$142,100
62	\$1,856,575	\$129,960	\$74,263	\$1,912,272	\$216,363
63	\$1,912,272	\$133,859	\$76,491	\$1,969,640	\$292,854
64	\$1,969,640	\$137,875	\$78,786	\$2,028,729	\$371,640
65	\$2,028,729	\$142,011	\$81,149	\$2,089,591	\$452,789
70	\$2,360,211	\$165,215	\$94,076	\$2,431,350	\$890,921

75	\$2,763,607	\$193,452	\$109,058	\$2,848,001	\$1,400,005
80	\$3,252,901	\$227,703	\$126,428	\$3,354,176	\$1,990,323
85	\$3,846,812	\$269,277	\$146,564	\$3,969,525	\$2,674,383
90	\$4,567,112	\$319,698	\$169,912	\$4,716,898	\$3,468,103

Practical Financial Freedom Multiples

To cover **\$70,000 annual spending**, choose a target portfolio multiple based on risk tolerance, age, and external income:

FINANCIAL INDEPENDENCE CAPITAL MULTIPLES

20× Expenses (\$1,400,000)	25× Expenses (\$1,750,000)	30× Expenses (\$2,100,000)
Lean / High Risk Tolerance	Standard 4% Rule Baseline	Ultra-Safe Early Retire

- **20× Expenses (\$1,400,000 — 5% Rate):** Suitable if retiring late (age 68+), having strong Social Security coverage, or willing to reduce spending during market downturns.
- **25× Expenses (\$1,750,000 — 4% Rate):** Standard benchmark for traditional retirement at age 60–65 across a 30-year horizon.
- **30×+ Expenses (\$2,100,000+ — 3.3% Rate):** Recommended for early retirement (age 40–50), high medical overhead, or zero reliance on state pensions/Social Security.

Simple Master Formula

$$Required\ Capital = \frac{Annual\ Spending - Guaranteed\ Income\ (Social\ Security/Pension)}{Safe\ Withdrawal\ Rate\ (SWR)}$$

Essential Formula Adjustments

1. **Social Security / Pensions:** Subtract guaranteed annual income from your target \$70,000 expenditure before calculating capital needs.
2. **Taxes:** If withdrawing primarily from traditional tax-deferred accounts, gross up your spending target by your estimated effective tax rate:

$$\text{Gross Target} = \frac{\text{Net Spending}}{(1 - \text{Tax Rate})}$$

3. **Healthcare:** Budget an additional \$10,000–\$15,000 per year prior to age 65 (Medicare eligibility) to cover private health insurance premiums.