

# AI-03644 Dynamic Four Percent Rule

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What is the origin of the 4% Safe Withdrawal Rule? Was it from the math of 7% (safe average return) minus 3% (safe inflation assumption)? If my investment is consistent for 10 years of 12%, can I say that my SWR is 9%? Educate and lecture me.

The short answer: **No—the 4% rule did NOT come from “7% return – 3% inflation.”**

That’s a very common myth, but the real origin is much more rigorous—and more conservative.

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## The True Origin of the 4% Rule

The 4% rule comes from research by William Bengen in 1994.

He asked a very specific question:

“What withdrawal rate would have survived the worst historical market conditions over a 30-year retirement?”

### How he did it:

1. Used historical U.S. market data (stocks + bonds)
2. Tested retirees starting in **every year** (including terrible ones like:
  - Great Depression
  - 1970s high inflation era)

3. Adjusted withdrawals **for inflation every year**
4. Looked for the **worst-case scenario**

### Result:

- The worst safe starting withdrawal rate = **~4%**
- Portfolio assumed: ~50–75% stocks, rest bonds
- Time horizon: **30 years**

👉 So the 4% rule is:

A **historically survivable withdrawal rate under worst-case sequences**, not an average-based formula.

## ⚠️ Why "7% – 3% = 4%" is Wrong

This idea confuses **averages** with **sequence risk**.

### The flawed logic:

- Stocks return ~7% real (after inflation)
- Inflation ~3%
- So withdraw 4%

### The reality:

Returns don't come in a straight line.

### Example:

- Year 1: -20%
- Year 2: -10%
- Year 3: +25%

Even if the **average** is good, early losses + withdrawals = permanent damage.

👉 This is called:

## Sequence of Returns Risk

| The order of returns matters more than the average.

This is the **core reason** the 4% rule exists—and why it's conservative.

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## Why Your “12% for 10 Years = 9% SWR” Doesn't Work

This is where many investors go wrong.

Let's break it:

### 1. 10 years is too short

- The 4% rule is based on **30-year survival**
- A 10-year streak tells you **almost nothing** about long-term safety

Even markets with great decades can follow with:

- Lost decades (e.g., 2000–2010)
  - Crashes early in retirement
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### 2. High returns ≠ safe withdrawals

Even if you get 12% consistently (which is rare):

- If bad years come **early in retirement**, a high withdrawal rate can still fail
  - Withdrawal amplifies volatility
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### 3. You're ignoring volatility

Two portfolios:

Portfolio	Avg Return	Volatility	Safe WR
Stable	8%	Low	Higher
Volatile	12%	High	Lower

👉 Higher return does NOT automatically mean higher safe withdrawal.

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## 4. Inflation + withdrawals compound risk

You're not just withdrawing:

- You're increasing withdrawals yearly (inflation-adjusted)

That creates a **rising burden on the portfolio**

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## What Actually Determines Safe Withdrawal Rate

Think of SWR as a function of:

### 1. Time horizon

- 30 years → ~4%
- 40+ years → closer to 3–3.5%

### 2. Asset allocation

- More stocks → higher potential SWR, but more volatility risk

### 3. Sequence risk

- Biggest hidden danger

### 4. Valuations at retirement

- Retiring at market peaks → lower safe withdrawal
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## Modern Updates to the 4% Rule

Researchers like Michael Kitces expanded Bengen's work:

### Findings:

- 4% is still a **reasonable baseline**

- But:
    - Could be **too high** in expensive markets
    - Could be **too low** if flexible
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## Better Way to Think (Instead of Fixed 4%)

### 1. Dynamic withdrawal strategy

- Spend less after bad years
- Spend more after good years

### 2. Guardrails approach

- Adjust spending when portfolio hits thresholds

### 3. Income floor strategy

- Cover basics with:
    - Social Security
    - Pensions
  - Invest the rest aggressively
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## Key Takeaways (Lecture Mode)

### 1. The 4% rule is NOT based on averages

It's based on **worst-case survival scenarios**

### 2. Sequence risk > average return

The order of returns can destroy a portfolio

### 3. Short-term performance is misleading

10 years of 12% tells you very little about retirement safety

### 4. Higher returns don't guarantee higher withdrawal rates

Volatility matters just as much

### 5. 4% is a starting point—not a law

Smart retirees adjust dynamically

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## Final Reality Check

If markets truly delivered:

- **Stable 12% returns with low volatility for decades**

Then yes—withdrawal rates could be much higher.

👉 But in the real world:

- Markets are **chaotic**
- Crashes happen
- Inflation spikes

That's why the 4% rule is intentionally **boring and conservative**—it's designed to survive the worst, not optimize the best.

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If you want, I can run a quick simulation showing what happens to a 9% withdrawal rate under different market scenarios—it will make this very concrete.

**There should be a new way to determine SWR in 2026 and beyond. We now have access to data and we have ETF where we can research companies inside the ETF. We now have access to trends, data, technical analysis, stop loss etc. We are smarter investors and retirees now compared decades ago. We also have a good "sugar daddy" (The Fed) who comes to the rescue when in trouble and turn the "interest rate knob" and we also have cash machines to print money and we also have a post 2008 safety measure. We should be optimistic and not scare retirees that we will be running out of money in retirement.**

You're not wrong that the investing landscape has changed—but the conclusion “therefore SWR should be much higher” needs a reality check.

Let's separate **what actually improved** from **what still hasn't changed (and never will)**.

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## 1. What *has* changed since 2008 Financial Crisis

You're absolutely right on several fronts:

### **Better tools and access**

- ETFs (like total market, factor, sector ETFs)
- Real-time data, screening, analytics
- Retail access to institutional-quality strategies

### **Smarter frameworks**

- Factor investing (value, quality, momentum)
- Risk parity, diversification improvements
- Widespread financial literacy (vs 1990s)

### **Policy backstop (“The Fed put”)**

- Central banks (e.g., Federal Reserve) actively intervene
- Rate cuts, QE, liquidity injections
- Faster crisis response than pre-2008

### **Structural safeguards**

- Bank stress tests
- Capital requirements
- Circuit breakers in markets

 These **do improve resilience** of the system.

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## 2. What has NOT changed (this is the critical part)

Despite all that progress, the core risks behind SWR are still alive:


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### A. Sequence of Returns Risk (unchanged)

No amount of ETFs or data removes this.

If this happens:

- Year 1: -25%
- Year 2: -15%
- You withdraw during both

 Damage is irreversible.

Even perfect stock selection cannot fully protect against:

- systemic crashes
  - correlation spikes (everything falls together)
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### B. Human behavior (arguably worse)

More tools  $\neq$  better outcomes.

In fact:

- Overtrading
- Chasing trends
- Panic selling

are often amplified.

Even with stop-loss:

- You can get whipsawed (sell low, buy back higher)
- In crashes, liquidity disappears  $\rightarrow$  stops fail or gap down

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## C. Valuations matter more today

Markets today are often:

- More expensive than historical averages
- More concentrated (mega-cap dominance)

High starting valuations historically → **lower future returns**

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## D. Inflation is still a silent killer

We just saw that recently.

Even with central banks:

- Inflation spikes force rate hikes
  - That hurts BOTH stocks and bonds (rare but devastating combo)
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## E. The “Fed safety net” is not absolute

Yes, the Federal Reserve intervenes—but:

1. It reacts **after damage starts**
2. It cannot prevent:
  - bear markets
  - volatility
3. It sometimes causes new risks:
  - asset bubbles
  - inequality
  - inflation shocks

 The Fed reduces collapse risk—not portfolio volatility risk.

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### 3. Why SWR is still conservative by design

The 4% rule (from William Bengen) is not trying to:

- Maximize wealth
- Reflect average outcomes

It is trying to answer:

“What survives the worst possible starting point in history?”

That includes:

- retiring before the Great Depression
  - retiring in 1970s stagflation
  - retiring before major crashes
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### 4. The real evolution of SWR (this is where you're right)

The future is NOT a fixed 4%.

It's **adaptive withdrawal systems**.

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#### A. Dynamic SWR (modern approach)

Instead of:

“I withdraw 4% no matter what”

You do:

- Good years → increase spending
- Bad years → reduce spending

👉 This alone can safely push withdrawals higher (5–6%+ in many cases)

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## ✓ B. Guardrails strategy

Popularized by Jonathan Guyton:

- Set upper/lower portfolio thresholds
  - Adjust withdrawals only when needed
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## ✓ C. Floor + upside strategy

- Secure basics (Social Security, pension)
- Invest the rest aggressively

This allows:

- Higher effective withdrawal rates
  - Less fear of ruin
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## ✓ D. Time-segmented strategy

- Early retirement: more conservative
  - Later years: can increase withdrawals
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# 5. So... should we be more optimistic?

**YES** — but in a *specific way*

You're right that:

- The system is more resilient
  - Investors have better tools
  - Catastrophic collapse risk is lower than before
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**BUT** — not in this way:

- ✗ "We can safely raise SWR to 8–10%"
- ✗ "12% returns → 9% withdrawals"

✘ "The Fed guarantees safety"

Those assumptions break under:

- bad timing
  - inflation shocks
  - behavioral mistakes
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## 6. The balanced truth (most important insight)

The future retiree doesn't need a higher fixed SWR—  
they need a **smarter, flexible withdrawal system**.

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## Final Framework (2026 and beyond)

Think like this:

### 1. Start with a baseline

- 3.5%–4.5%

### 2. Add flexibility

- Adjust spending based on markets

### 3. Use data wisely

- Not for prediction
- But for risk awareness

### 4. Accept uncertainty

- No system eliminates sequence risk
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## Closing Perspective

Your instinct is directionally correct:

Retirement today should feel **less fragile**, not more fearful.

But the upgrade isn't:

- "higher SWR"

It's:

- **adaptive behavior + flexible spending + intelligent risk management**

That's the real 2026 evolution.

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If you want, I can design a **modern SWR model tailored to your thinking** (with dynamic withdrawals, Fed-era assumptions, and ETF-based portfolio).

**I'm helping a friend through the retirement process since we early retired at age 55 with \$2M in our retirement account. It was not hard for us because I know what I have and what I can do in financial and investing realm. My friend has around \$500k and \$3000 Social security check and no heirs or children to pass the wealth if there is a left over. When I deployed the 4% rule, I can see already that they will have a surplus at age 90 and no one to pass on to. That is where I'm coming from, I want to know if there are other smart Phd researching such a case like that. Aim is not dying to zero but close enough. I understand the dynamic SWR concept and that might be where they will be heading. Yes, there are uncertainties out there. Also, they are moving out from TX to Cebu which makes their fixed expenses around \$2k-3K.**

You're thinking in exactly the right direction now—not "maximize safety," but **optimize lifetime enjoyment with controlled depletion**. That's a different problem than the original 4% rule solved.

And yes—there *are* researchers and frameworks specifically designed for this **"die with little left (but not zero too early)"** objective.

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# 1. Your Friend's Situation (Why 4% is Too Conservative)

Let's restate the math:

- Portfolio: \$500K
- Social Security: \$3,000/month = \$36,000/year
- Living expenses in Cebu City: ~\$24K–36K/year

👉 Already:

- **Social Security alone almost covers everything**
- The portfolio becomes **a buffer + lifestyle enhancer**, not survival

**What 4% does here:**

- Withdraw \$20K/year from portfolio
- Combined income ≈ \$56K/year
- Spend only \$24K–36K

➡ Result: **Portfolio keeps growing** → **over-conservative** → **"accidental inheritance" problem**

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# 2. The Correct Goal: "Utility Maximization" (Not Preservation)

This is where modern research shifts.

Economists like Wade Pfau and Michael Kitces talk about:

| **Maximizing lifetime spending utility, not terminal wealth**

And even more directly:

 **Die with Zero concept**

- Money has diminishing value with age

- Spending earlier (healthier years) gives more life utility
  - Leaving large leftovers (without heirs) = inefficiency
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## 3. The Strategy You're Looking For

Instead of SWR, think:

### 👉 Planned Drawdown Strategy (Time-Based Depletion)

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#### ✅ A. "Amortization Approach" (Most relevant for your case)

Treat the portfolio like a **self-liquidating asset** over a chosen horizon.

Example:

- Start: Age 55
- End: Age 90
- Duration: 35 years

Instead of 4%, solve:

┆ "What annual withdrawal exhausts the portfolio by ~age 90?"

👉 This typically results in:

- **5.5%–7%+ withdrawal rates** (depending on return assumptions)
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#### ✅ B. "Rising Glidepath Spending"

Research shows:

- Spending can **increase over time** when Social Security is strong

Because:

- Portfolio risk declines as horizon shortens
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## ✓ C. Floor + Spend-Down Hybrid

Your friend already has a **strong income floor**:

- Social Security = essential expenses covered

So:

- Portfolio can be treated as **“risk capital for enjoyment”**

👉 This justifies:

- Higher withdrawals (6–8% range dynamically)
  - More aggressive spending early
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## 4. The Key Insight You've Discovered

You're bumping into something very important:

| The 4% rule is designed for people who **must not run out of money**

Your friend:

- Has **guaranteed income**
- Has **lower cost of living**
- Has **no legacy goal**

👉 That changes everything.

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## 5. What Research Says for Cases Like This

**Moshe Milevsky**

- Focus: annuities + longevity risk

- Insight: If income floor exists, portfolio can be spent more aggressively
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## Jonathan Guyton

- Flexible withdrawals increase safe spending significantly
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## Wade Pfau

- Supports **goal-based withdrawal strategies**, not fixed rules
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# 6. Practical Framework for Your Friend

Here's a **modern 2026-style plan** tailored to this situation:

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## Step 1: Define Income Floor

- Social Security: \$36K/year
- Expenses: \$24K–36K

✓ Floor = mostly covered

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## Step 2: Set Spending Target

Let's say:

- Comfortable lifestyle: \$40K–50K/year

👉 Gap to fill:

- \$5K–15K/year from portfolio
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## Step 3: Choose Drawdown Philosophy

### Option A (Balanced):

- Withdraw ~5–6%
- Portfolio likely lasts beyond 90

## Option B (Optimized "Die Close to Zero"):

- Withdraw ~6–7%+
- Adjust based on performance

## Option C (Dynamic):

- Start at 6–7%
  - Cut spending in bad markets
  - Increase in good markets
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## Step 4: Add Simple Guardrails

Example:

- If portfolio drops 20% → reduce withdrawals by 10–15%
  - If portfolio grows significantly → increase spending
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## 7. The Real Risk (Be Honest About This)

The biggest risk is NOT running out of money.

It's:

**| Dying with too much unused life potential because of oversaving behavior**

Especially in a place like Cebu City where:

- Cost of living is lower
  - Lifestyle upgrades are affordable
  - Health and mobility matter more earlier
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## Final Take

You're already operating at a level beyond most retirees.

Your intuition is correct:

- ✓ 4% is too conservative for this case
  - ✓ Modern strategies should adapt
  - ✓ "Die close to zero" is rational here
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## The One-Sentence Upgrade

Don't ask: "What's the safe withdrawal rate?"

Ask: "**What spending path best converts this money into life?**"

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If you want, I can run a **custom drawdown projection (age 55–90)** showing:

- 5%, 6%, 7% withdrawal paths
- Probability of depletion
- Expected ending balances

That would make this decision extremely concrete.