

Thrift Savings Plan

Pre-Retirement Planning

PRESENTED BY

STEWART KAPLAN, CEBS[®], AFC[®], RFC[®]



Thrift Savings Plan

FEDERAL RETIREMENT THRIFT INVESTMENT BOARD

77 K Street, NE · Washington, DC · 20002

1-877-968-3778 · tsp.gov

tsp4gov @



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Not an easy task...

**Retirement income planning is a really hard problem.
It's the hardest problem I've ever looked at.**

- William F. Sharpe



Sources of Retirement Income

***38% percent of workers in the United States are expecting income from continued work during their retirement**



A chalkboard with a wooden frame contains the following text written in white chalk:

$$\begin{array}{l} \textit{Expected need} \\ - \textit{Expected fixed income} \\ \hline \textit{TSP Savings Goal} \end{array}$$

Case Study: Susan

Susan, age 46 is a GS-7, Step 7 FERS employee (approximately \$55,000/yr.)
She wants to retire on ~80% of her income at age 65

$$\frac{\text{Expected need} - \text{Expected fixed income}}{\text{TSP Savings Goal}}$$

She currently has \$53,000 in her TSP and is contributing at the rate of 5%.
If she continues to work until age 65 contributing at the same rate and her salary increases at ~3%/yr., and doesn't take out any loans or withdrawals, what would be a reasonable estimate of her TSP balance at age 65?

- At 5% Rate of Return (RoR)/yr ~ \$351,695*
- At 7% RoR/yr ~ \$456,361*

- If her salary increases at ~3%/yr., it will be ~\$96,000 at 65
- 80% of her last year's salary will be ~\$77,000 (\$77,000/12≈\$6,500/monthly)
- Assuming no adjustment for inflation, if her TSP were her **ONLY** source of income, how long would it take to completely exhaust her account?
 - At 5% RoR/yr ~ 61 months (5 years, 1 month)* (age 70)
 - At 7% RoR/yr ~ 77 months (6 years, 5 months)* (age 72)

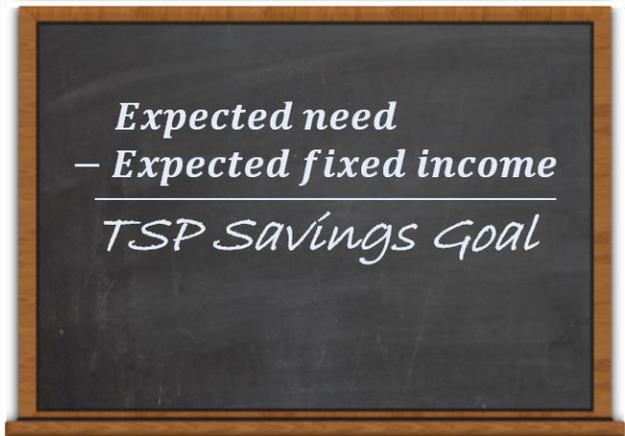
Case Study: Susan

Susan will receive a FERS pension and Social Security retirement income

- Social Security retirement benefit:
 - Susan's year of birth was 1972
 - Using Social Security Quick Calculator
 - At age 67, ~ \$1,886/month
 - At age 65? ~ \$1,610/month

- FERS at age 65
 - Using FER formula at OPM.gov
 - \$95,000 (high-3) x 25 (yrs.) x 1.1 (multiplier) = \$26,125 (-10% for Survivor Annuity) = \$25,864 (\$25,864/12 = \$2,155); therefore, about \$2,155/month

- Thrift Savings Plan
 - $\$6,500 - (\$1,610 + \$2,155) = \$2,735$
 - Using Retirement Income Calculator on TSP.gov
 - At 5% RoR/yr ~ 61 months (15 years) (age 80)
 - At 7% RoR/yr ~ (30+ years)



Expected need
- Expected fixed income

TSP Savings Goal

Result at 5%

Adjust Your Results

To see different payment amounts, you can change the information you entered in the calculator:

i What factors affect the amount and/or duration of my payments? [Learn more](#)

Retirement Income [Change](#)

Amount to use for monthly income: \$351,695.00

Length of Retirement Planned [Change](#)

Your current age: 65
 Age you expect to begin receiving income from the TSP: 65
 Age to which you expect to live: 95
 Month of your birth: January

Monthly Income Amount [Change](#)

Income amount you would like to receive each month: \$2,735.00
 Assumed annual earnings rate (the rate you expect your savings to grow): 5.00%

Joint Life Dependent Options [Change](#)

In the event of your death, is there someone who will be dependent on your TSP monthly income? No

Monthly Income by Age in Retirement

Age	Fixed Dollar	
	Payment	Year-End Balance
65	\$2,735.00	\$335,577.50
66	\$2,735.00	\$318,654.12
67	\$2,735.00	\$300,884.56
68	\$2,735.00	\$282,226.54
69	\$2,735.00	\$262,635.62
70	\$2,735.00	\$242,065.15
71	\$2,735.00	\$220,466.15
72	\$2,735.00	\$197,787.20
73	\$2,735.00	\$173,974.31
74	\$2,735.00	\$148,970.79
75	\$2,735.00	\$122,717.08
76	\$2,735.00	\$95,150.68
77	\$2,735.00	\$66,205.96
78	\$2,735.00	\$35,814.01
79	\$2,735.00	\$3,902.47
80	\$2,735.00	\$0.00

Result at 7%

Adjust Your Results

To see different payment amounts, you can change the information you entered in the calculator:

i What factors affect the amount and/or duration of my payments? [Learn more](#)

Retirement Income [Change](#)

Amount to use for monthly income: \$456,361.00

Length of Retirement Planned [Change](#)

Your current age: 65
 Age you expect to begin receiving income from the TSP: 65
 Age to which you expect to live: 95
 Month of your birth: January

Monthly Income Amount [Change](#)

Income amount you would like to receive each month: \$2,735.00
 Assumed annual earnings rate (the rate you expect your savings to grow): 7.00%

Joint Life Dependent Options [Change](#)

In the event of your death, is there someone who will be dependent on your TSP monthly income? No

Monthly Income by Age in Retirement

Age	Fixed Dollar	
	Payment	Year-End Balance
65	\$2,735.00	\$454,254.72
66	\$2,735.00	\$452,000.98
67	\$2,735.00	\$449,589.49
68	\$2,735.00	\$447,009.18
69	\$2,735.00	\$444,248.25
70	\$2,735.00	\$441,294.06
71	\$2,735.00	\$438,133.09
72	\$2,735.00	\$434,750.83
73	\$2,735.00	\$431,131.82
74	\$2,735.00	\$427,259.49
75	\$2,735.00	\$423,116.08
76	\$2,735.00	\$418,682.65
77	\$2,735.00	\$413,938.85
78	\$2,735.00	\$408,863.00
79	\$2,735.00	\$403,431.85
80	\$2,735.00	\$397,620.51
81	\$2,735.00	\$391,402.38
82	\$2,735.00	\$384,748.99
83	\$2,735.00	\$377,629.85
84	\$2,735.00	\$370,012.37
85	\$2,735.00	\$361,861.68
86	\$2,735.00	\$353,140.45
87	\$2,735.00	\$343,808.72
88	\$2,735.00	\$333,823.76
89	\$2,735.00	\$323,139.85
90	\$2,735.00	\$311,708.05
91	\$2,735.00	\$299,476.03
92	\$2,735.00	\$286,387.79

Retirement Income Calculator Comparison – 5% vs. 7% Comparison

Age: 65
Balance:
\$351,695
RoR: 5%
Payments:
\$2,735/month

Monthly Income by Age in Retirement

Age	Fixed Dollar	
	Payment	Year-End Balance
65	\$2,735.00	\$335,860.99
66	\$2,735.00	\$318,951.80
67	\$2,735.00	\$301,197.15
68	\$2,735.00	\$282,554.77
69	\$2,735.00	\$262,980.25
70	\$2,735.00	\$242,427.01
71	\$2,735.00	\$220,846.11
72	\$2,735.00	\$198,186.17
73	\$2,735.00	\$174,393.23
74	\$2,735.00	\$149,410.67
75	\$2,735.00	\$123,178.95
76	\$2,735.00	\$95,635.64
77	\$2,735.00	\$66,715.17
78	\$2,735.00	\$36,348.68
79	\$2,735.00	\$4,463.87
80	\$2,735.00	\$0.00
81	\$0.00	\$0.00

Age: 65
Balance:
\$456,361
RoR: 7%
Payments:
\$2,735/month

Monthly Income by Age in Retirement

Age	Fixed Dollar	
	Payment	Year-End Balance
65	\$2,735.00	\$454,254.72
66	\$2,735.00	\$452,000.98
67	\$2,735.00	\$449,589.49
68	\$2,735.00	\$447,009.18
69	\$2,735.00	\$444,248.25
70	\$2,735.00	\$441,294.06
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91	\$2,735.00	\$299,476.03
92	\$2,735.00	\$286,387.79

Tables are from
 “Retirement
 Income
 Calculator” on
 TSP.gov

Both sets of calculations ignore inflation



Retirement Income Calculator Results (5%) with Inflation Factor of 2.5%/year

Age: 65, Balance: \$351,695, RoR: 5%
 Payments: **\$2,735/month every month**

Age: 65, Balance: \$351,695, RoR: 5%
 Payments: **\$2,735/month for first year and then increase by 2.5% each year thereafter**

Monthly Income by Age in Retirement

Age	Fixed Dollar	
	Payment	Year-End Balance
65	\$2,735.00	\$335,860.99
66	\$2,735.00	\$318,951.80
67	\$2,735.00	\$301,197.15
68	\$2,735.00	\$282,554.77
69	\$2,735.00	\$262,980.25
70	\$2,735.00	\$242,427.01
71	\$2,735.00	\$220,846.11
72	\$2,735.00	\$198,186.17
73	\$2,735.00	\$174,393.23
74	\$2,735.00	\$149,410.67
75	\$2,735.00	\$123,178.95
76	\$2,735.00	\$95,635.64
77	\$2,735.00	\$66,715.17
78	\$2,735.00	\$36,348.68
79	\$2,735.00	\$4,463.87
80	\$2,735.00	\$0.00
81	\$2,735.00	\$0.00

Total annual withdrawal stays at \$32,820

Total annual withdrawal increases by 2.5% each year

Age	Total annual withdrawal with monthly payment increasing by 2.5%/yr	Year end balance
65	\$32,820.00	\$335,515.89
66	\$33,640.50	\$318,651.18
67	\$34,481.51	\$300,102.23
68	\$35,343.55	\$279,763.79
69	\$36,227.14	\$257,524.84
70	\$37,132.82	\$233,268.27
71	\$38,061.14	\$206,870.54
72	\$39,012.67	\$178,201.40
73	\$39,987.98	\$147,123.49
74	\$40,987.68	\$113,491.98
75	\$42,012.37	\$77,154.21
76	\$43,062.68	\$37,949.23
77	\$44,139.25	

Retirement Income Calculator Results (7%) with Inflation Factor of 2.5%/year

Age: 65, Balance: \$456,361, RoR: 7%
 Payments: **\$2,735/month every month**

Age: 65, Balance: \$456,361, RoR: 7%
 Payments: **\$2,735/month for first year and then increase by 2.5% each year thereafter**

Monthly Income by Age in Retirement

Age	Fixed Dollar	
	Payment	Year-End Balance
65	\$2,735.00	\$454,254.72
66	\$2,735.00	\$452,000.98
67	\$2,735.00	\$449,589.49
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Total annual withdrawal stays at \$32,820

Total annual withdrawal increases by 2.5% each year

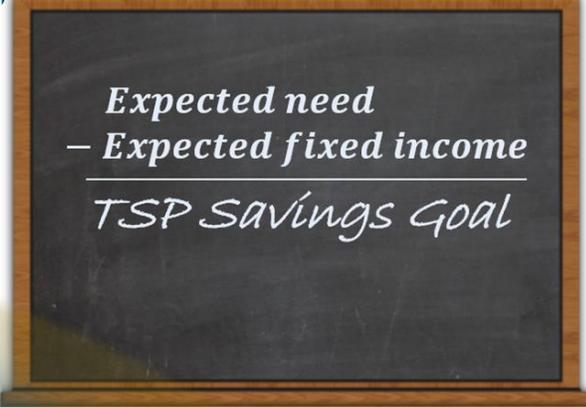
Age	Total annual withdrawal with monthly payment increasing by 2.5%/yr	Year end balance
65	\$32,820.00	\$454,192.45
66	\$33,640.50	\$452,345.42
67	\$34,481.51	\$449,528.09
68	\$35,343.55	\$445,651.50
69	\$36,227.14	\$440,619.97
70	\$37,132.82	\$434,330.55
71	\$38,061.14	\$426,672.55
72	\$39,012.67	\$417,526.96
73	\$39,987.98	\$406,765.87
74	\$40,987.68	\$394,251.80
75	\$42,012.37	\$379,837.05
76	\$43,062.68	\$363,362.96
77	\$44,139.25	\$344,659.11
78	\$45,242.73	\$323,542.52
79	\$46,373.80	\$299,816.69
80	\$47,533.15	\$273,270.72
81	\$48,721.47	\$243,678.19
82	\$49,939.51	\$210,796.15
83	\$51,188.00	\$174,363.88
84	\$52,467.70	\$134,101.66
85	\$53,779.39	\$89,709.38
86	\$55,123.88	\$40,865.16
87	\$56,501.97	

Agenda

- How Will Your Financial Needs Change?
- Estimating Your Future Income Needs
- Deciding When to Retire
- How Long Will You Need Your Retirement Income?
- Estimating Your Future Fixed Income
- Factoring for Inflation
- TSP Core Fund Performance
- Your TSP Contributions – Are You Getting the Most Bang for Your Buck?
- Retirement Savings Goals
- Tracking Your Progress
- Cracking the Nest Egg
- Decumulation Scenarios
- TSP Resources



How Will Your Financial Needs Change?


$$\begin{array}{r} \textit{Expected need} \\ - \textit{Expected fixed income} \\ \hline \textit{TSP Savings Goal} \end{array}$$

What impact will being retired have on my monthly expenses?

How much income do I need now?

Will my standard of living change?

How many years of income should I plan for?



How Will Your Financial Needs Change?

Your income needs during retirement may be less...

**Some expenses
may decrease:**

- TSP contributions
- OASDI (SS) deductions
- IRA contributions
- Income taxes
- Life insurance
- Commuting costs
- Mortgage (will it be paid off?)
- Reduced housing costs if you “downsize”
- Financial support for children?

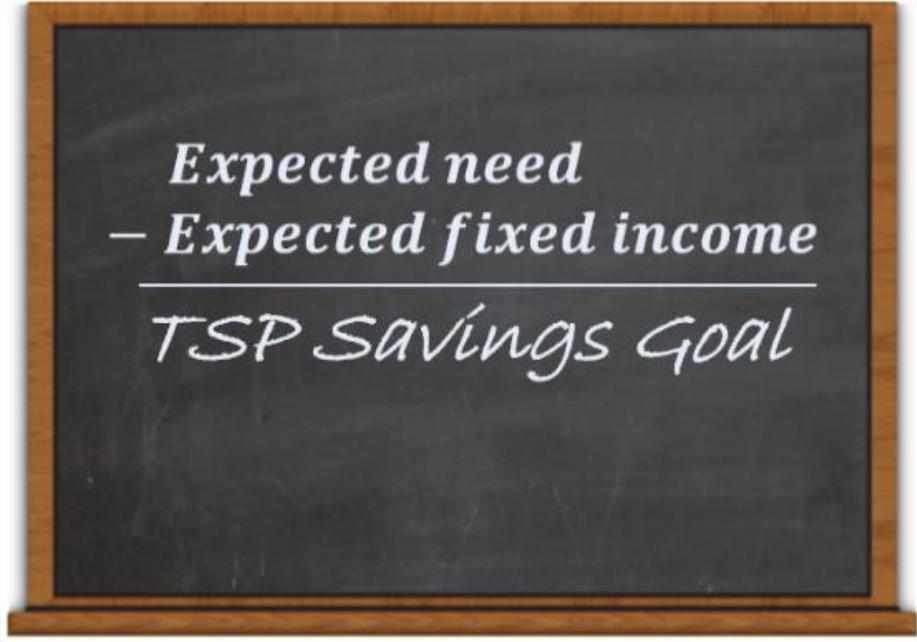
**Some expenses
may increase:**

- Health care
- Travel
- Recreation and hobbies
- Vacation property?
- Relocate to higher cost area?



Estimating Your Future Income Needs

1. **Traditional “replacement ratio” (70% - 80% at age 65)**
2. **Retirement cash-flow forecast compared with your current budget/cash-flow**
3. **Wealth accumulation target – what multiple of pre-retirement income will you need to have saved?**


$$\frac{\text{Expected need} - \text{Expected fixed income}}{\text{TSP Savings Goal}}$$

Deciding When to Retire

The longer you wait, the less money you'll need to support your desired lifestyle

- TSP account will have more time to grow
- Will be able to make TSP contributions for a longer period of time
- Will have more years and a higher salary toward your FERS/CSRS annuity calculation
- Will delay need to begin drawing Social Security retirement income
- Will have more time to pay down/off a mortgage and other debts
- Will have more income to fund “spending surge” at retirement
- Will have fewer years of retirement to fund

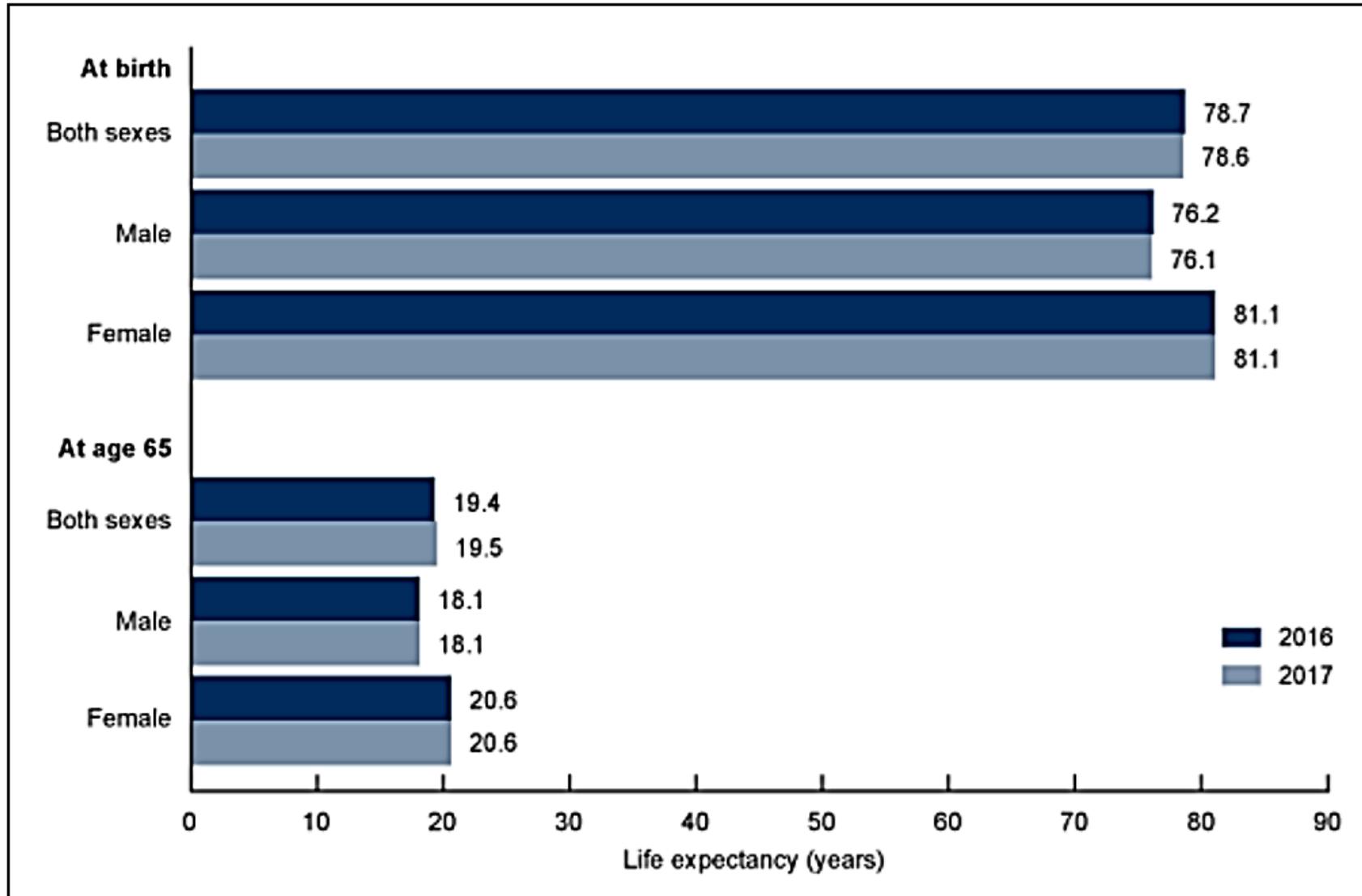
The sooner you retire, the sooner you'll have the freedom to do what you want

- May be in better health and have more energy for physical activities
- May be able to be more active with grandchildren (at younger ages) and with other family and friends
- May be able to pursue your post career life goals and creative endeavors earlier
- May enjoy the freedom from current employment-related stress
- May be able to start developing new friendships outside of work sooner
- Will probably have a little more time “to get it right” if you don't succeed right off the bat



How Long Will You Need Your Retirement Income?

Figure 1. Life expectancy at selected ages, by sex: United States, 2016 and 2017



Society of Actuaries “Age Wise” Infographic



Age Wise is a series of infographics to help individuals understand how life expectancy and the decisions they make impact their plans for a happy, healthy and well-funded retirement.



SOCIETY OF ACTUARIES

You may live much longer than you think.

Many people base their planning on what their grandparents or parents experienced, but **individual life expectancies have improved dramatically over the past century**. Current trends suggest that...



1 out of 3 males



1 out of 2 females

who are in their mid-50s today **will live to be 90**

Will your **retirement income plan** be enough?

It's not just luck or genes.

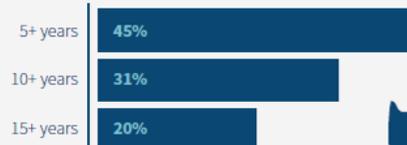
Some **factors** that influence how long you live may be **beyond your control**. Others depend upon the **choices you make** every day. A successful retirement plan will address both.



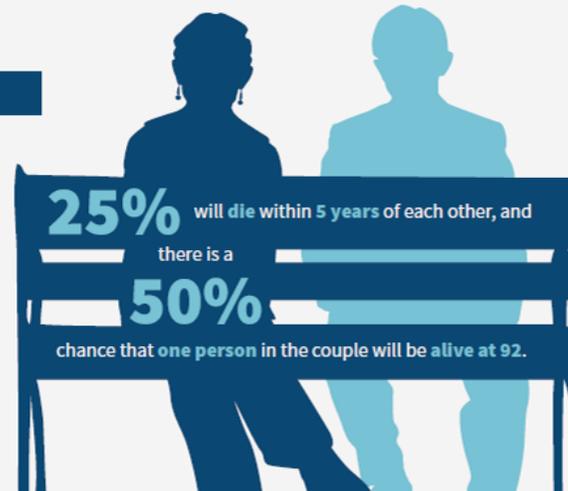
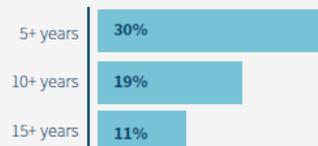
Couples should consider their combined planning timeline.

For a couple who are 65 today...

Odds a wife outlives her husband by...



Odds a husband outlives his wife by ...



- Personal Health & Safety Habits
- Medical Knowledge & Access to It
- Social Connections
- Genes / Gender
- Compliance with Medical Advice
- Prenatal & Childhood Conditions
- Education
- Health & Safety of Your Neighborhood

For a personalized look at longevity, see www.longevityillustrator.org

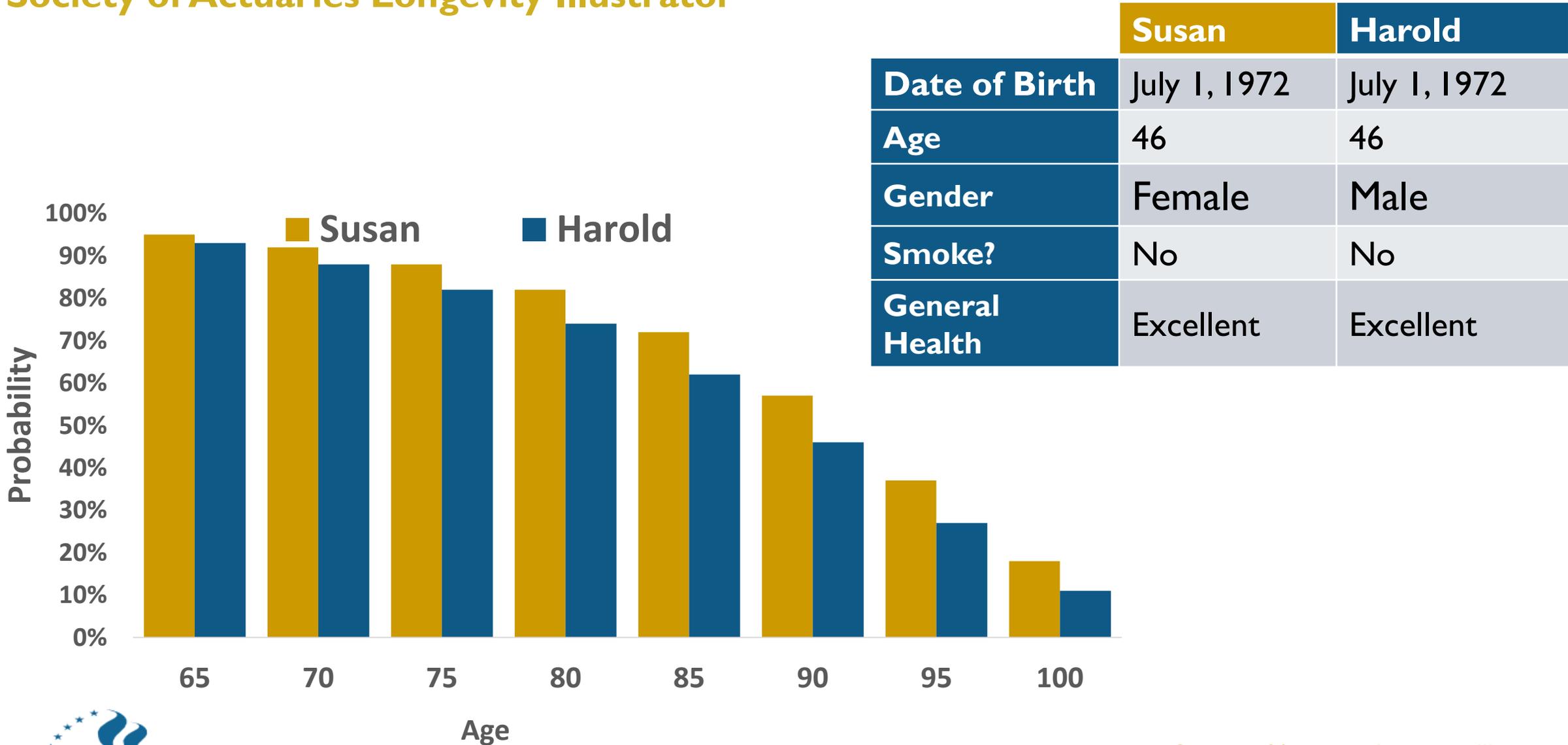
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Thrift Savings Plan

How Long Will You Need Your Retirement Income?

Society of Actuaries Longevity Illustrator



	Susan	Harold
Date of Birth	July 1, 1972	July 1, 1972
Age	46	46
Gender	Female	Male
Smoke?	No	No
General Health	Excellent	Excellent



Thrift Savings Plan

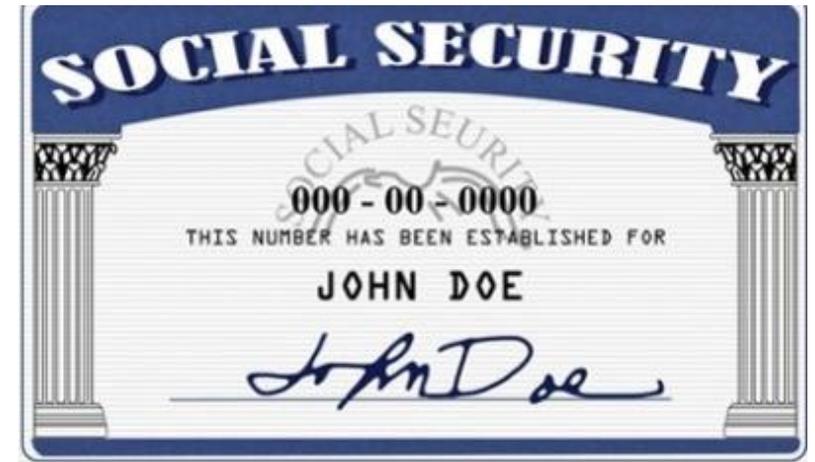
Society of Actuaries Longevity Illustrator

Estimating Your Future Fixed Income

Source of Income	Monthly Amount	Expected annual increase %
Your FERS/CSRS annuity		
Your spouse's annuity		
Your Social Security		
Your spouse's Social Security		
Your military retirement annuity		
Your spouse's military retirement annuity		
Distributions from IRAs		
Income from taxable investment accounts		
Rental income		
Income from job (in retirement)		
Other income?		
Total		

Estimating Your Future Fixed Income – Social Security Retirement

- Paid for the rest of your life
- Not subject to market risk
- Annual increases for inflation
- Part or all of it is exempt from federal income tax
- Benefits are paid automatically
 - Can mitigate the risk of making mistakes or being taken advantage of by fraudsters even if your cognitive abilities decline as you age
- Decision of when to start receiving benefits is very important and requires careful planning



Estimating Your Future Fixed Income – Social Security Retirement Estimator

- The Retirement Estimator gives estimates based on your actual Social Security earnings record
- Your estimated benefits are based on current law
- The law governing benefit amounts may change

Retirement Estimator

Your Retirement Benefit Estimate

The age that you start your benefits determines how much you receive each month.

We created estimates for you at three common retirement ages using your earnings information. You can also add your own custom estimates by changing your stop work age and future earnings.

If you start your benefits:	And you earn an average of:	Your benefit will be about:
At full retirement (age 67)	\$? a year (from now until full retirement)	\$? a month
At age 70	\$? a year (from now until age 70)	\$? a month
At age 62	\$? a year (from now until age 62)	\$? a month

How We Estimated Your Benefits

“We estimated your benefit amounts using your average earnings over your working lifetime.

If you worked last year, we will also assume that you will continue to work and make about the same amount as you entered for last year's earnings (or the estimated annual future earnings you entered for your custom scenarios).

Generally, the older you are and the closer you are to retirement, the more accurate your retirement estimates will be. The estimates are more accurate when they are based on a longer work history with fewer uncertainties such as earnings fluctuations and future law changes.”

Estimating Your Future Fixed Income – Future of Social Security Benefits

Social Security Frequently Asked Questions:

What is the Trustees Report on the Social Security trust funds?

“...The financial outlook for the Social Security and Medicare Trust Funds...The combined trust fund reserves are projected to become depleted, if Congress does not act before then, is 2035. At that time, there will be sufficient income coming in to pay 80 percent of scheduled benefits.

Estimating Your Future Fixed Income – FERS Annuity



Age	Formula
Under Age 62 at Separation for Retirement, OR Age 62 or Older With Less Than 20 Years of Service	1 percent of your high-3 average salary for each year of service
Age 62 or Older at Separation With 20 or More Years of Service	1.1 percent of your high-3 average salary for each year of service

- Special Provision for Air Traffic Controllers, Firefighters, Law Enforcement Officers, Capitol Police, Supreme Court Police, or Nuclear Materials Couriers
- 1.7% of your high-3 average salary multiplied by your years of service which do not exceed 20, PLUS
- 1% of your high-3 average salary multiplied by your service exceeding 20 years

Estimating Your Future Fixed Income – FERS Annuity Deductions

- Survivor Annuity
 - CSRS: Reduction for full annuity (55%) is ~10%
 - FERS: Reduction for full annuity (50%) is 10%
 - Reduction for 25% is 5%
- FEHB Premiums
 - Premiums remain the same in retirement (some exceptions)
 - May appear different since retirement annuity is paid monthly as opposed to bi-weekly, etc.
- FEGLI Coverage
 - If eligible, you may choose to continue coverage and pay the premiums but you are not required to do so

Estimating Your Future Fixed Income – FERS Annuity Calculation

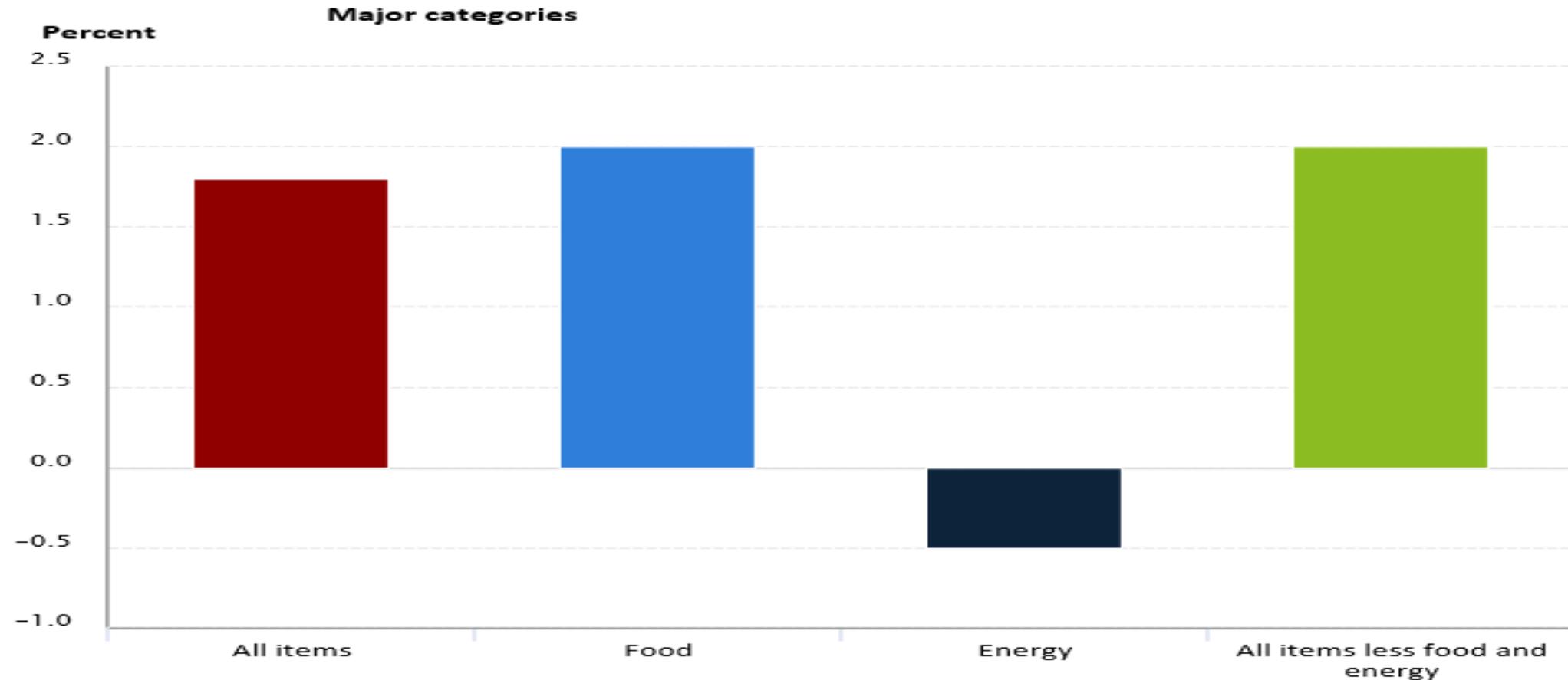
- Age: 65½
- High-3: \$100,000
- Years of Service: 22½

$$\begin{aligned} & \$100,000 \times 22.5 \times 1.1\% \\ & = \$24,750 \end{aligned}$$

Amount of Survivor Benefit/Annual Cost	Annual Annuity
0%/\$0	\$24,750
25%/\$1,238	\$23,512
50%/\$2,775	\$22,275

Factoring for Inflation – Consumer Price Index

12-month percentage change, Consumer Price Index, selected categories, May 2019, not seasonally adjusted

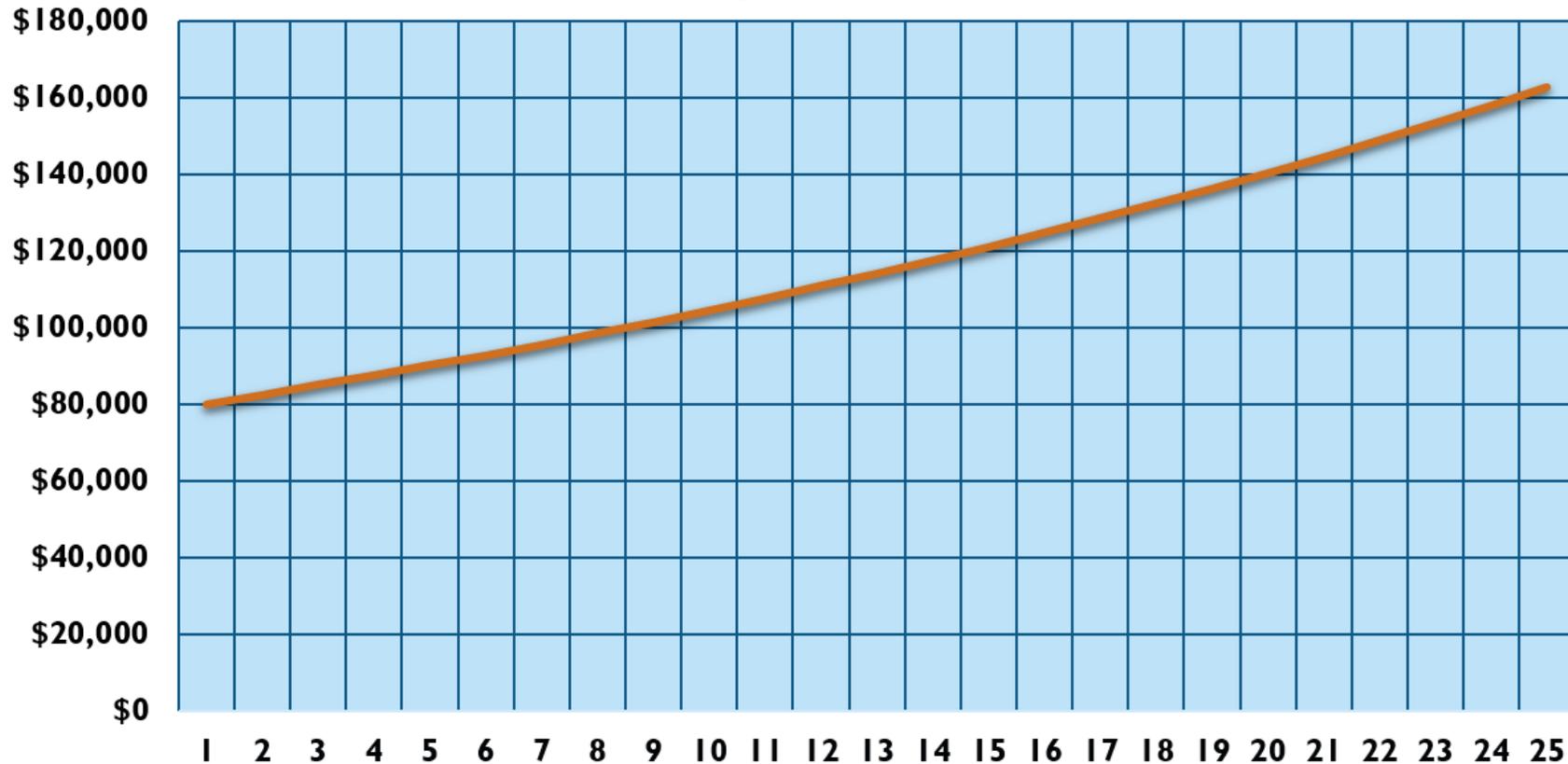


Source: U.S. Bureau of Labor Statistics.



Factoring for Inflation – Erosion of Purchasing Power

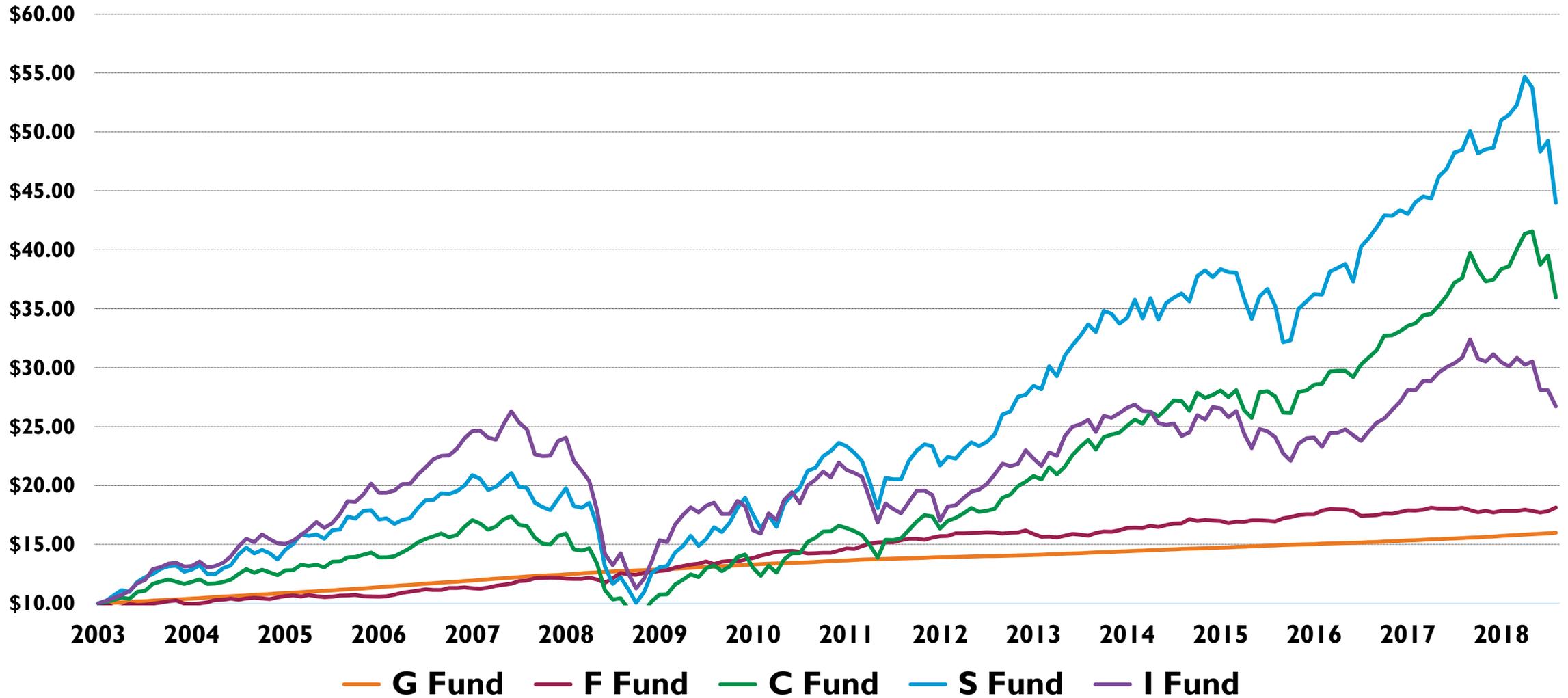
Assuming 3% annual inflation



Year	Assuming 3% annual inflation
1	\$80,000
2	\$82,400
3	\$84,872
4	\$87,418
5	\$90,041
6	\$92,742
7	\$95,524
8	\$98,390
9	\$101,342
10	\$104,382
11	\$107,513
12	\$110,739
13	\$114,061
14	\$117,483
15	\$121,007
16	\$124,637
17	\$128,377
18	\$132,228
19	\$136,195
20	\$140,280
21	\$144,489
22	\$148,824
23	\$153,288
24	\$157,887
25	\$162,624



TSP Core Fund Performance – Last 15 Years



TSP Core Fund Performance – Positive and Negative Returns



Your TSP Contributions – Are You Getting the Most Bang for Your Buck?

- Must contribute 5% to get full match (BRS and FERS)
- May make supplemental “catch-up” contributions after age 50
- What the experts say: “Five Retirement Investing Mistakes Employees Should Avoid”
 - Starting too late
 - Not saving enough
 - Investing too conservatively
 - Failing to prioritize retirement savings over other financial goals
 - Timing the market

Retirement Savings Goals

Establish a stream of income that won't decrease during times of market volatility

Lifestyle

Have income that will last for the rest of your life no matter how long that might be

Have adequate liquidity to meet financial emergencies and make major purchases

Liquidity

Longevity

Legacy

Leave a legacy for the future

Expected need
– *Expected fixed income*

TSP Savings Goal

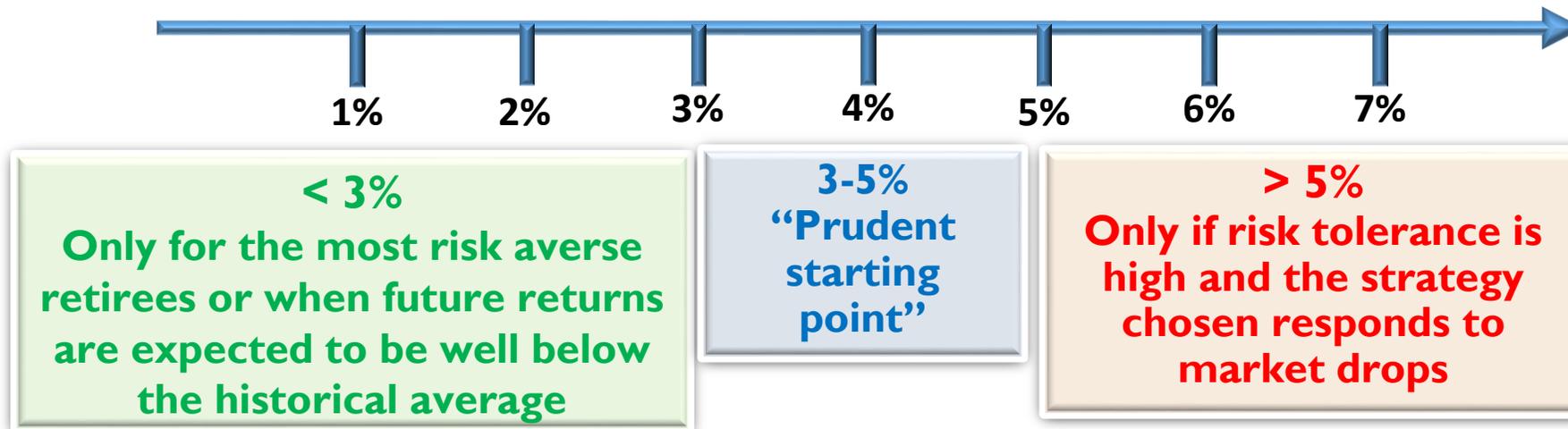


Tracking Your Progress

- Review TSP account performance on annual & quarterly statements
- Call the TSP Thrifline for questions or concerns with your account
- Consider:
 - Using the calculators under “Planning and Tools” on TSP.gov
 - Creating or finding and using a tool to help you analyze the math of your particular retirement plan
 - Seeking input from someone you trust to help you keep your plans firmly based on realistic assumptions
 - Having an ongoing honest conversation with your spouse about the specifics of your retirement plans
 - Regularly reevaluating your plan and being willing to make changes if analysis calls for it

Cracking the Nest Egg – In the Beginning

- The larger your balance, the more the effect of returns and withdrawals
 - Sequence of returns risk
 - Risk capacity
- Spending strategies that may mitigate risk:
 - Start conservatively
 - Be able to flex your strategy
 - Reduce volatility



Cracking the Nest Egg – Risks

- **Basic risks**

- Longevity
- Market
- Spending shocks
- Potential future inflation
- Interest rates

- **Retirement spending patterns**

- At retirement spending surge
 - During the five years before/after retirement, there is a significant increase in spending due to increased travel, relocation, housing and other lifestyle changes
- Lifetime spending curve, AKA, the “spending smile”
 - Overall spending decreases gradually from ~65 through ~85/90, then increases steeply mainly because of increased health care costs
- Spending volatility
 - During first three years of retirement there is a wide variation in spending behaviors among retirees

Cracking the Nest Egg – 4% Rule

- William Bengen researched the question, “How much can retirees withdraw from their savings over their remaining life and without depleting their money?” (1994)
 - Assumed age 65 at start and 30 years of withdrawals based on:
 - 30-year rolling periods beginning with 1926
 - 50/50 stock/bond allocations
 - Determined “SAFEMAX” withdrawal rate was 4.15% for first year with annual adjustments for inflation
- Professors from Trinity University did similar study on “portfolio success rates,” and expanded on the Bengen research (1998)
 - Determined withdrawals at 4% for first year with annual adjustments for inflation had 95% probability of success (wouldn’t deplete balance during 30-year period)
- Recent research has now looked at 62 rolling 30-year periods (1926 – 2016) and calculated statistical probabilities of success based on 50/50 allocations

Cracking the Nest Egg – More on the 4% Rule

- Retirement simulations based on longer time horizons point toward:
 - Lower withdrawal rates
 - Higher stock allocations
 - Stronger case for guaranteed income products (life annuities)
- Based on 50/50 allocation, SAFEMAX is 8% for ten-year horizons, 6% for fifteen, 5% for twenty and 4% for thirty
- RMD rules set withdrawal rates more conservatively until age 75
- Criticisms of 4% Rule: “Safe withdrawal rates” may not:
 - Adequately factor in investing costs
 - Account for the behavioral and market timing mistakes retiree investors make by buying high and selling low
 - Account for retiree investors in actively managed funds with returns that don’t match the benchmarks

Cracking the Nest Egg – What is the 4% Rule, AKA, the “Constant Dollar, Inflation Adjusted Strategy?”

How to implement 4% Rule:

- Begin by withdrawing an amount equal to 4% of account balance over the course of the first year
- For each subsequent year, multiply the preceding year’s dollar amount and add an inflation factor based on the previous year’s inflation rate
- Don’t adjust for market returns
- Inflation will determine how much money is withdrawn
- Market returns will determine how long the money lasts

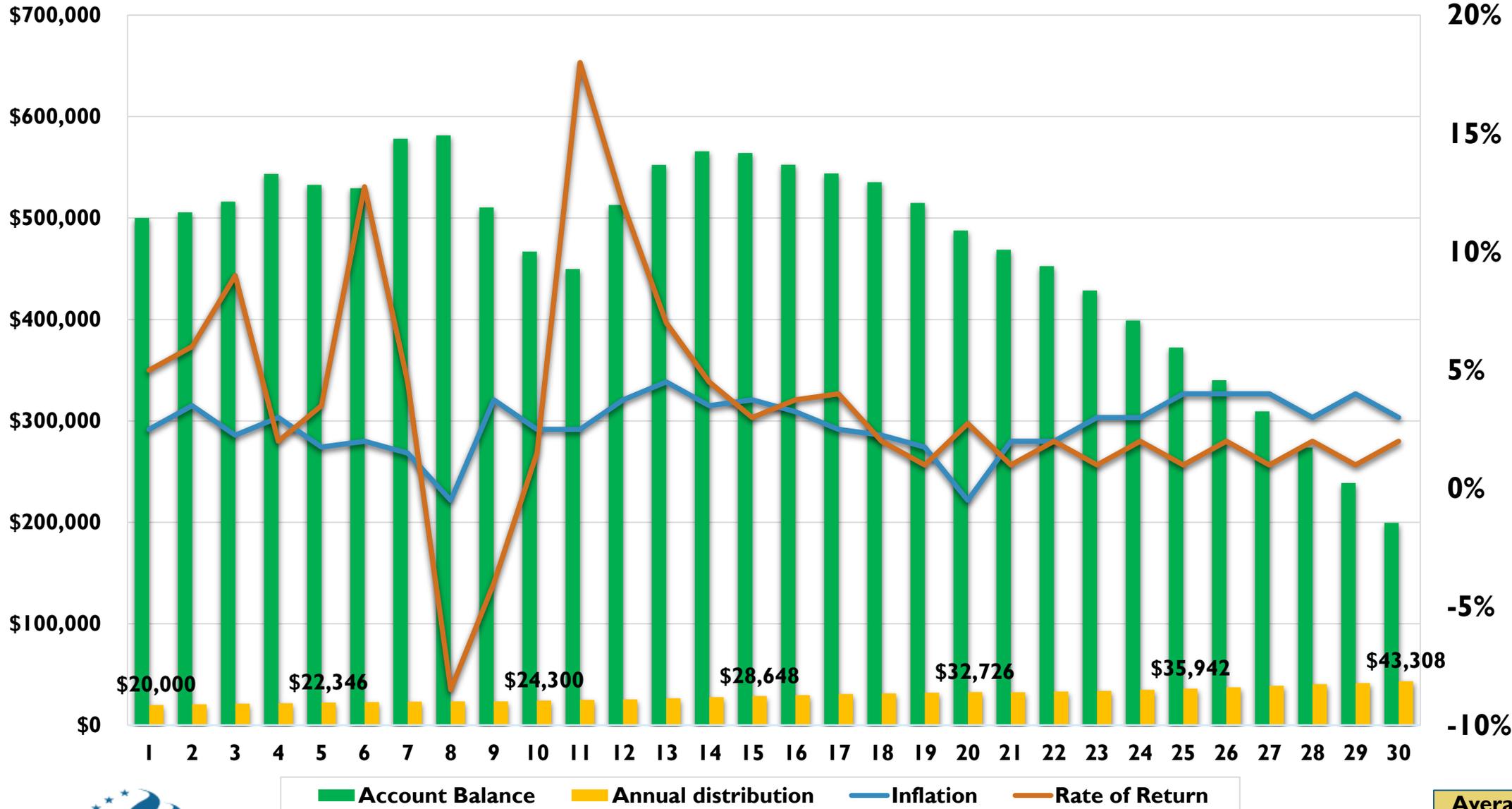
Example:

- Balance at retirement = **\$500,000**
- $\$500,000 \times 4\% = \mathbf{\$20,000}$ (for first year)
- Monthly distributions = **\$1,677/month**
- **Second year:** Adjust for inflation (2.5%)
- $\$20,000 \times .025 = \500
- $\$20,000 + \$500 = \mathbf{\$20,500}$
- Monthly distributions = **\$1,708/month**

Decumulation Scenarios



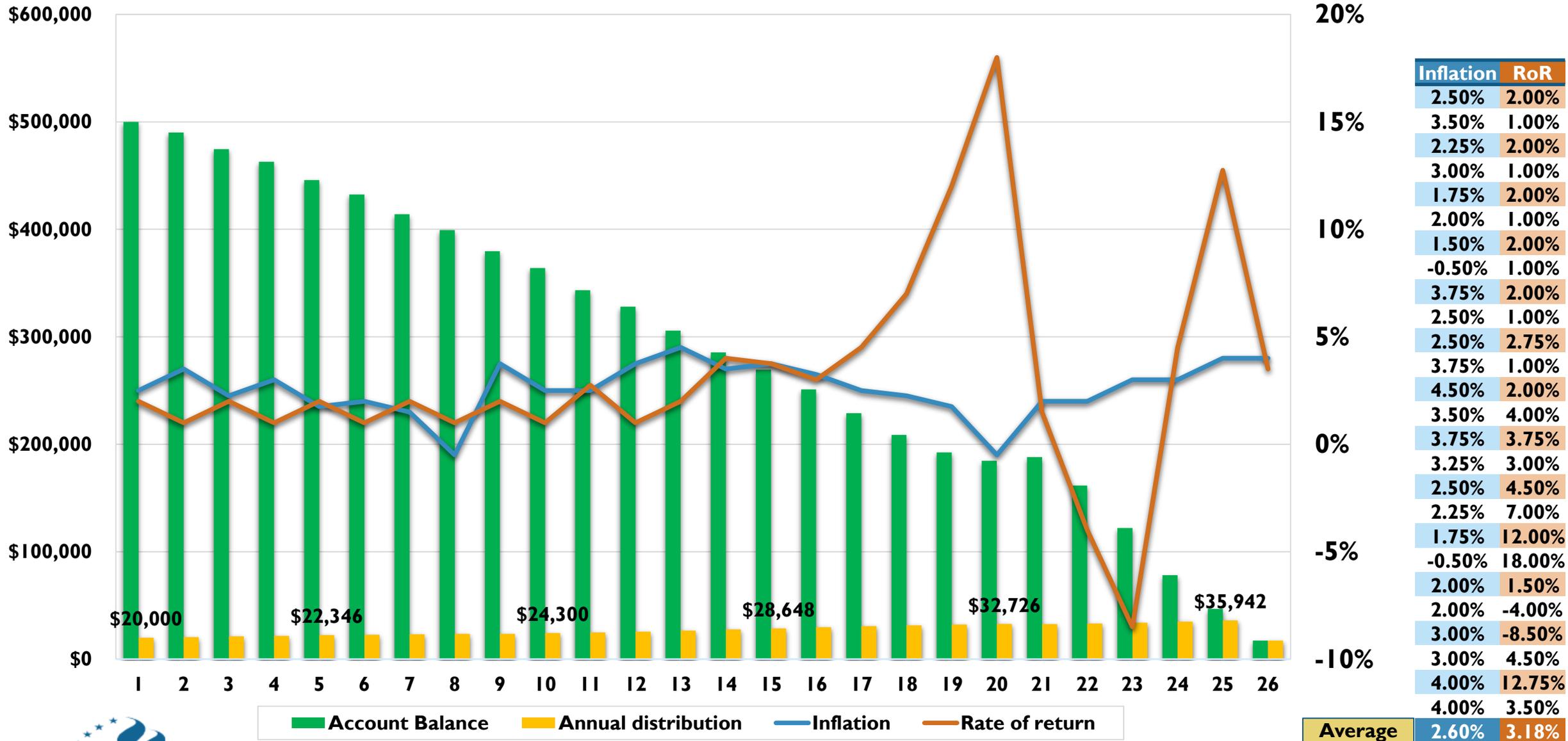
Constant Dollar, Inflation Adjusted Strategy - 4% Rule



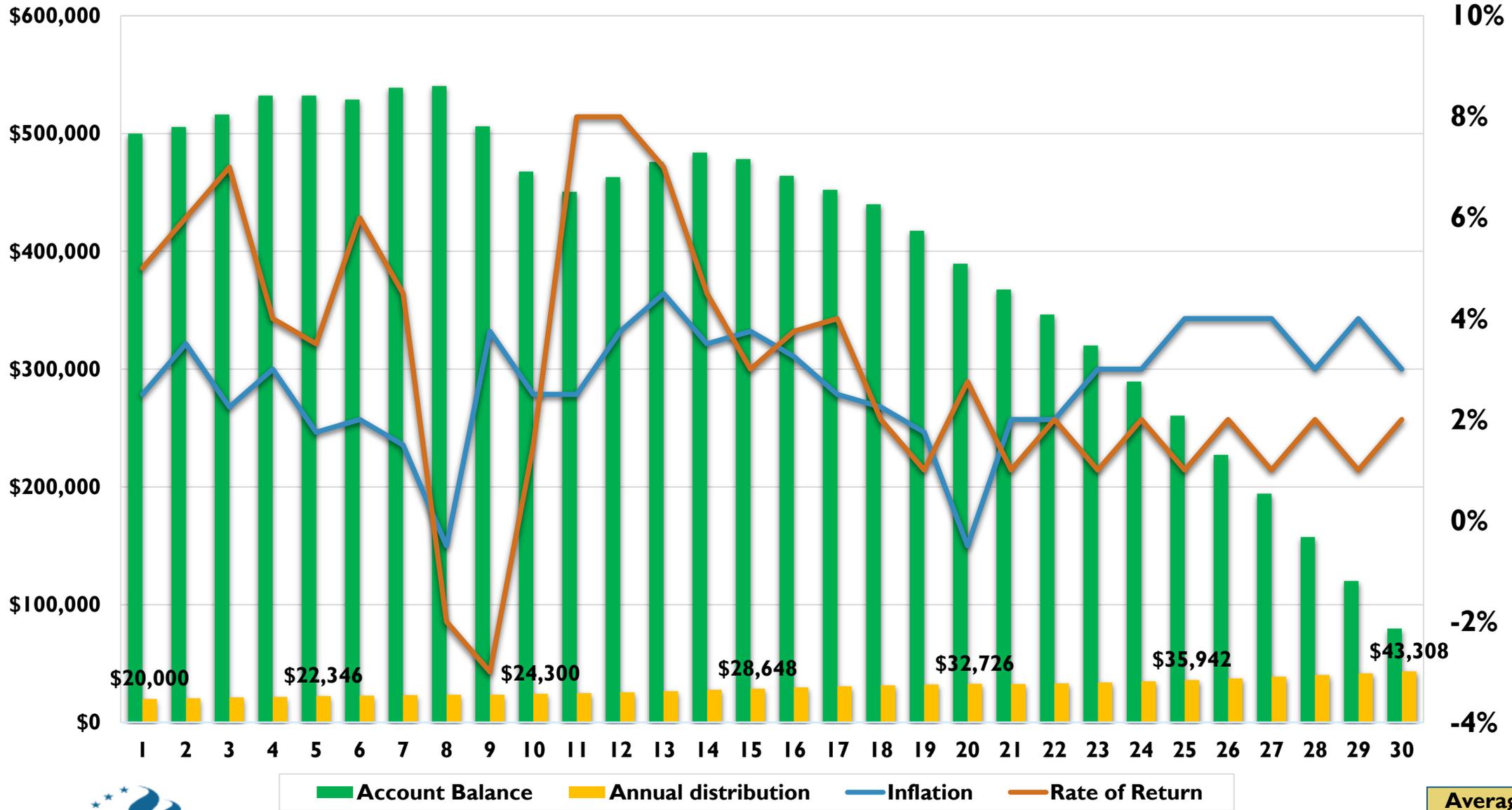
Inflation	RoR
2.50%	5.00%
3.50%	6.00%
2.25%	9.00%
3.00%	2.00%
1.75%	3.50%
2.00%	12.75%
1.50%	4.50%
-0.50%	-8.50%
3.75%	-4.00%
2.50%	1.50%
2.50%	18.00%
3.75%	12.00%
4.50%	7.00%
3.50%	4.50%
3.75%	3.00%
3.25%	3.75%
2.50%	4.00%
2.25%	2.00%
1.75%	1.00%
-0.50%	2.75%
2.00%	1.00%
2.00%	2.00%
3.00%	1.00%
3.00%	2.00%
4.00%	1.00%
4.00%	2.00%
4.00%	1.00%
3.00%	2.00%
4.00%	1.00%
3.00%	2.00%
Average	2.72%
	3.49%



Sequence of Rates of Return Reversed



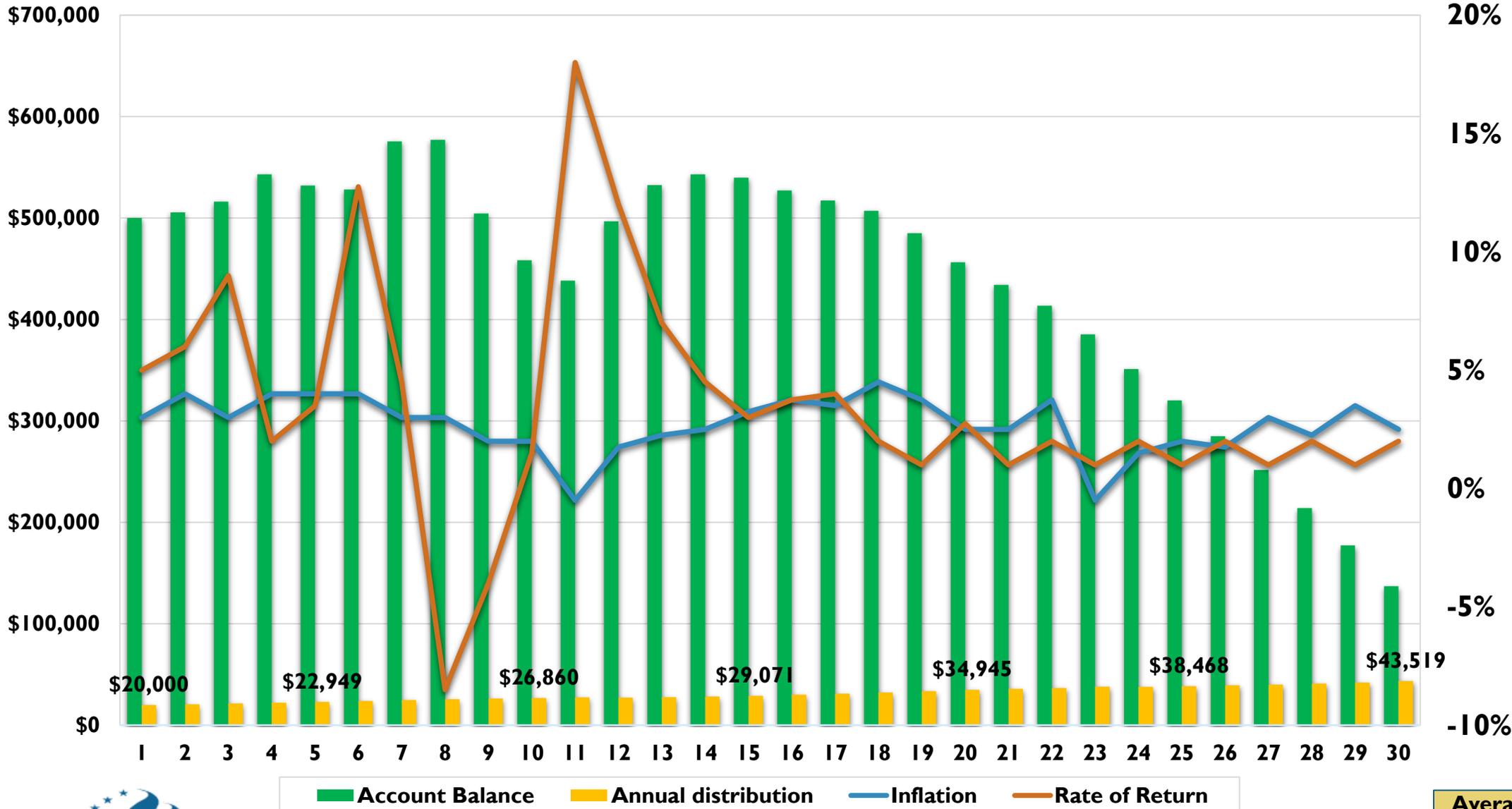
Narrowed Range of Return Volatility



Inflation	RoR
2.50%	5.00%
3.50%	6.00%
2.25%	7.00%
3.00%	4.00%
1.75%	3.50%
2.00%	6.00%
1.50%	4.50%
-0.50%	-2.00%
3.75%	-3.00%
2.50%	1.50%
2.50%	8.00%
3.75%	8.00%
4.50%	7.00%
3.50%	4.50%
3.75%	3.00%
3.25%	3.75%
2.50%	4.00%
2.25%	2.00%
1.75%	1.00%
-0.50%	2.75%
2.00%	1.00%
2.00%	2.00%
3.00%	1.00%
3.00%	2.00%
4.00%	1.00%
4.00%	2.00%
4.00%	1.00%
3.00%	2.00%
4.00%	1.00%
3.00%	2.00%
Average	2.72%
	3.05%

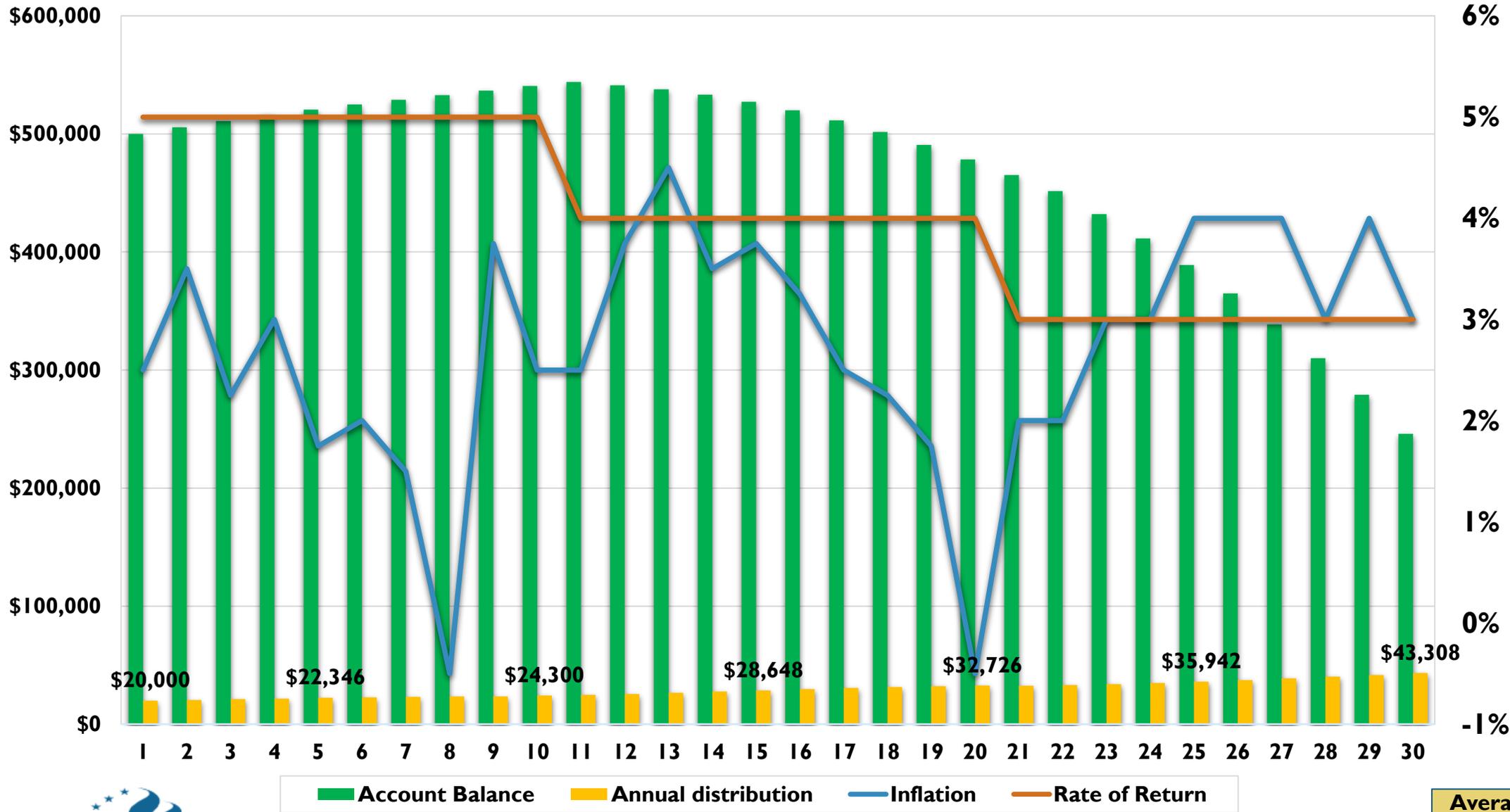


Sequence of Inflation Rates Reversed



Inflation	RoR
3.00%	5.00%
4.00%	6.00%
3.00%	9.00%
4.00%	2.00%
4.00%	3.50%
4.00%	12.75%
3.00%	4.50%
3.00%	-8.50%
2.00%	-4.00%
2.00%	1.50%
-0.50%	18.00%
1.75%	12.00%
2.25%	7.00%
2.50%	4.50%
3.25%	3.00%
3.75%	3.75%
3.50%	4.00%
4.50%	2.00%
3.75%	1.00%
2.50%	2.75%
2.50%	1.00%
3.75%	2.00%
-0.50%	1.00%
1.50%	2.00%
2.00%	1.00%
1.75%	2.00%
3.00%	1.00%
2.25%	2.00%
3.50%	1.00%
2.50%	2.00%
Average	2.72%
	3.49%

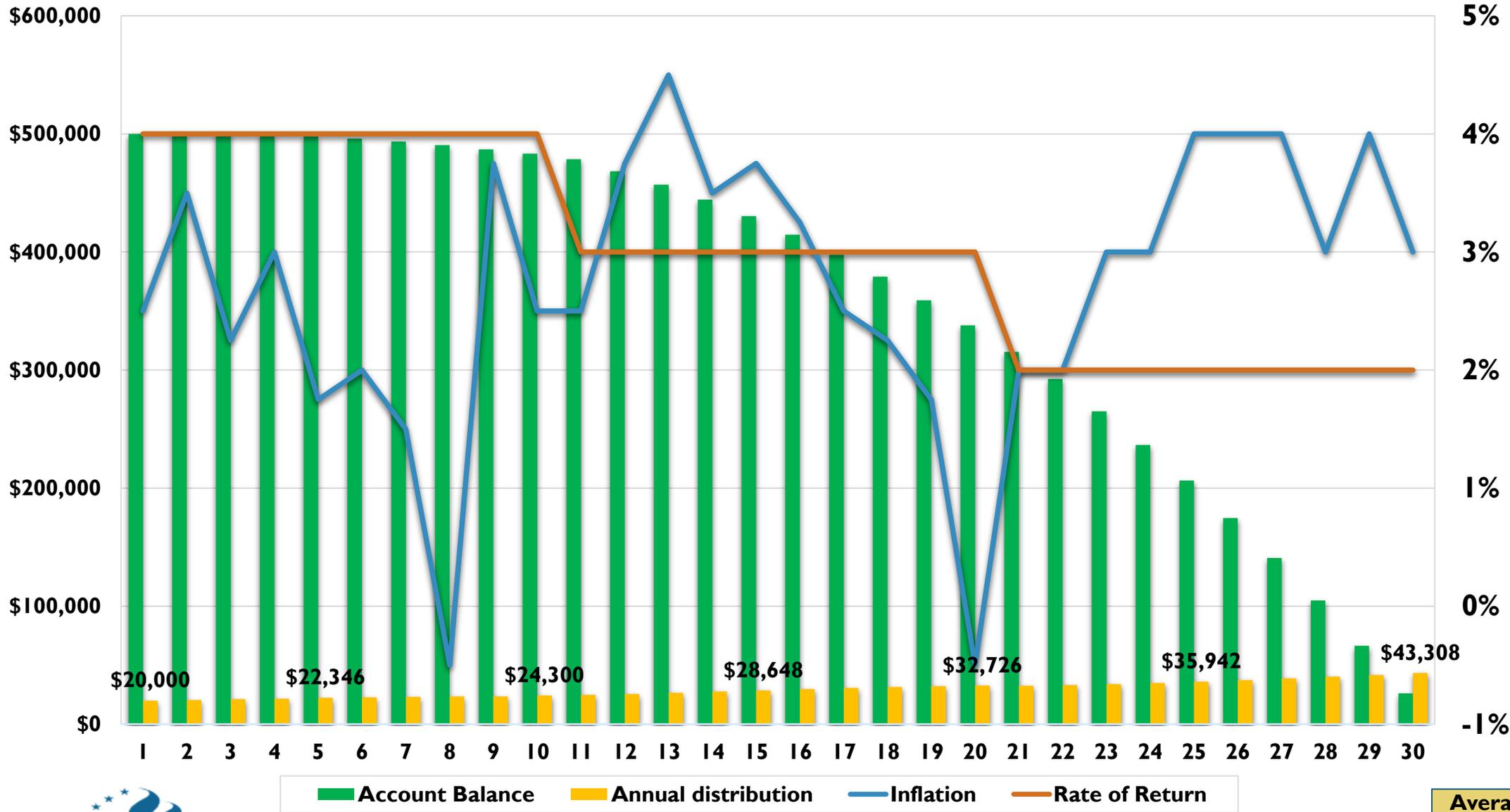
Rates of Return Reduced Each 10 years: 5%, 4% and 3%



Inflation	RoR
2.50%	5.00%
3.50%	5.00%
2.25%	5.00%
3.00%	5.00%
1.75%	5.00%
2.00%	5.00%
1.50%	5.00%
-0.50%	5.00%
3.75%	5.00%
2.50%	5.00%
3.75%	4.00%
4.50%	4.00%
3.50%	4.00%
3.75%	4.00%
2.50%	4.00%
2.25%	4.00%
1.75%	4.00%
-0.50%	4.00%
2.00%	3.00%
2.00%	3.00%
3.00%	3.00%
3.00%	3.00%
4.00%	3.00%
4.00%	3.00%
3.00%	3.00%
4.00%	3.00%
3.00%	3.00%
3.00%	3.00%
3.00%	3.00%
Average	2.72%
	4.00%



Rates of Return Reduced Each 10 years: 4%, 3% and 2%



Inflation	RoR
2.50%	4.00%
3.50%	4.00%
2.25%	4.00%
3.00%	4.00%
1.75%	4.00%
2.00%	4.00%
1.50%	4.00%
-0.50%	4.00%
3.75%	4.00%
2.50%	3.00%
3.75%	3.00%
4.50%	3.00%
3.50%	3.00%
3.75%	3.00%
3.25%	3.00%
2.50%	3.00%
2.25%	3.00%
1.75%	3.00%
-0.50%	3.00%
2.00%	2.00%
2.00%	2.00%
3.00%	2.00%
3.00%	2.00%
4.00%	2.00%
4.00%	2.00%
4.00%	2.00%
3.00%	2.00%
4.00%	2.00%
3.00%	2.00%
Average	2.72%
	3.00%



TSP Resources

Reach out for help if
you need it!

You may also visit **TSP.GOV** and log into "My Account" to perform many of these transactions and inquiries.

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Notes

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Available 24 hours a day, 7 days a week.
Outside the U.S. and Canada:
404-233-4400
TDD: 1-877-847-4388

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We help people retire with dignity

We administer the TSP solely in the interest of participants and beneficiaries

We help participants make smart choices



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