

## Spreadsheet Tracks Year-by-Year Portfolio Value

You must make three key decisions for your retirement financial plan: 1) Spending Rate and therefore the Constant Dollar Amount for Spending; 2) Mix of Stocks and Bonds (chart shows mix for stocks; the balance is bonds); 3) Investing Cost, which is the assumed net reduction from market returns incurred when we invest.

This table excludes the effect of using an off-the-top Reserve, approximately one year of spending. In a year of very poor returns, you'd tap the Reserve for spending: in effect, you skip a year of withdrawal from your Investment Portfolio.

|       |            | W/D for        |         | Mix         |         |             |             | Investing |         |
|-------|------------|----------------|---------|-------------|---------|-------------|-------------|-----------|---------|
|       |            | Spending just  |         | 85%         |         | End Year    |             | Cost      |         |
| Start | Beg Bal of | prior to Jan 1 | Start   | Real Return | Return  | Bal B4      | Invest Cost | End B4    |         |
| Year  | Portfolio  | 4.40%          | of Year | Rate in Yr. | \$      | Invest Cost | 0.07%       | next W/D  |         |
| 1     | 1969       | 1,000.0        | 44      | 956.0       | -13.29% | (127.0)     | 829.0       | 0.6       | 828.4   |
| 2     | 1970       | 828.4          | 44      | 784.4       | -0.38%  | (3.0)       | 781.5       | 0.5       | 780.9   |
| 3     | 1971       | 780.9          | 44      | 736.9       | 10.43%  | 76.9        | 813.8       | 0.6       | 813.2   |
| 4     | 1972       | 813.2          | 44      | 769.2       | 13.14%  | 101.1       | 870.3       | 0.6       | 869.7   |
| 5     | 1973       | 869.7          | 44      | 825.7       | -19.72% | (162.8)     | 662.9       | 0.5       | 662.4   |
| 6     | 1974       | 662.4          | 44      | 618.4       | -30.34% | (187.6)     | 430.8       | 0.3       | 430.5   |
| 7     | 1975       | 430.5          | 44      | 386.5       | 24.30%  | 93.9        | 480.4       | 0.3       | 480.1   |
| 8     | 1976       | 480.1          | 44      | 436.1       | 17.21%  | 75.1        | 511.2       | 0.4       | 510.8   |
| 9     | 1977       | 510.8          | 44      | 466.8       | -12.13% | (56.6)      | 410.2       | 0.3       | 409.9   |
| 10    | 1978       | 409.9          | 44      | 365.9       | -3.32%  | (12.1)      | 353.7       | 0.2       | 353.5   |
| 11    | 1979       | 353.5          | 44      | 309.5       | 2.05%   | 6.4         | 315.8       | 0.2       | 315.6   |
| 12    | 1980       | 315.6          | 44      | 271.6       | 13.03%  | 35.4        | 307.0       | 0.2       | 306.8   |
| 13    | 1981       | 306.8          | 44      | 262.8       | -11.80% | (31.0)      | 231.8       | 0.2       | 231.6   |
| 14    | 1982       | 231.6          | 44      | 187.6       | 19.74%  | 37.0        | 224.7       | 0.2       | 224.5   |
| 15    | 1983       | 224.5          | 44      | 180.5       | 14.91%  | 26.9        | 207.4       | 0.1       | 207.3   |
| 16    | 1984       | 207.3          | 44      | 163.3       | 3.56%   | 5.8         | 169.1       | 0.1       | 169.0   |
| 17    | 1985       | 169.0          | 44      | 125.0       | 26.83%  | 33.5        | 158.5       | 0.1       | 158.4   |
| 18    | 1986       | 158.4          | 44      | 114.4       | 18.21%  | 20.8        | 135.2       | 0.1       | 135.1   |
| 19    | 1987       | 135.1          | 44      | 91.1        | -0.33%  | (0.3)       | 90.8        | 0.1       | 90.7    |
| 20    | 1988       | 90.7           | 44      | 46.7        | 10.67%  | 5.0         | 51.7        | 0.0       | 51.7    |
| 21    | 1989       | 51.7           | 44      | 7.7         | 23.89%  | 1.8         | 9.5         | 0.0       | 9.5     |
| 22    | 1990       | NOT ENUF       | 44      | NOT ENUF    | -7.37%  | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 23    | 1991       | #VALUE!        | 44      | #VALUE!     | 24.96%  | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 24    | 1992       | #VALUE!        | 44      | #VALUE!     | 6.26%   | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 25    | 1993       | #VALUE!        | 44      | #VALUE!     | 8.32%   | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 26    | 1994       | #VALUE!        | 44      | #VALUE!     | 0.40%   | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 27    | 1995       | #VALUE!        | 44      | #VALUE!     | 33.31%  | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 28    | 1996       | #VALUE!        | 44      | #VALUE!     | 15.54%  | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 29    | 1997       | #VALUE!        | 44      | #VALUE!     | 28.55%  | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |
| 30    | 1998       | #VALUE!        | 44      | #VALUE!     | 24.25%  | #VALUE!     | #VALUE!     | #VALUE!   | #VALUE! |

**Could take 21 years of full W/D for spending. Then NOT ENUF.**

The column of real returns comes from data published by Ibbotson, SBBI Yearbook, 2017.

The return data provided is for two classes of stocks, three of bonds, and one for short-term bills.

I used Large Company Stocks and US Gov't Bonds for the calculations here.