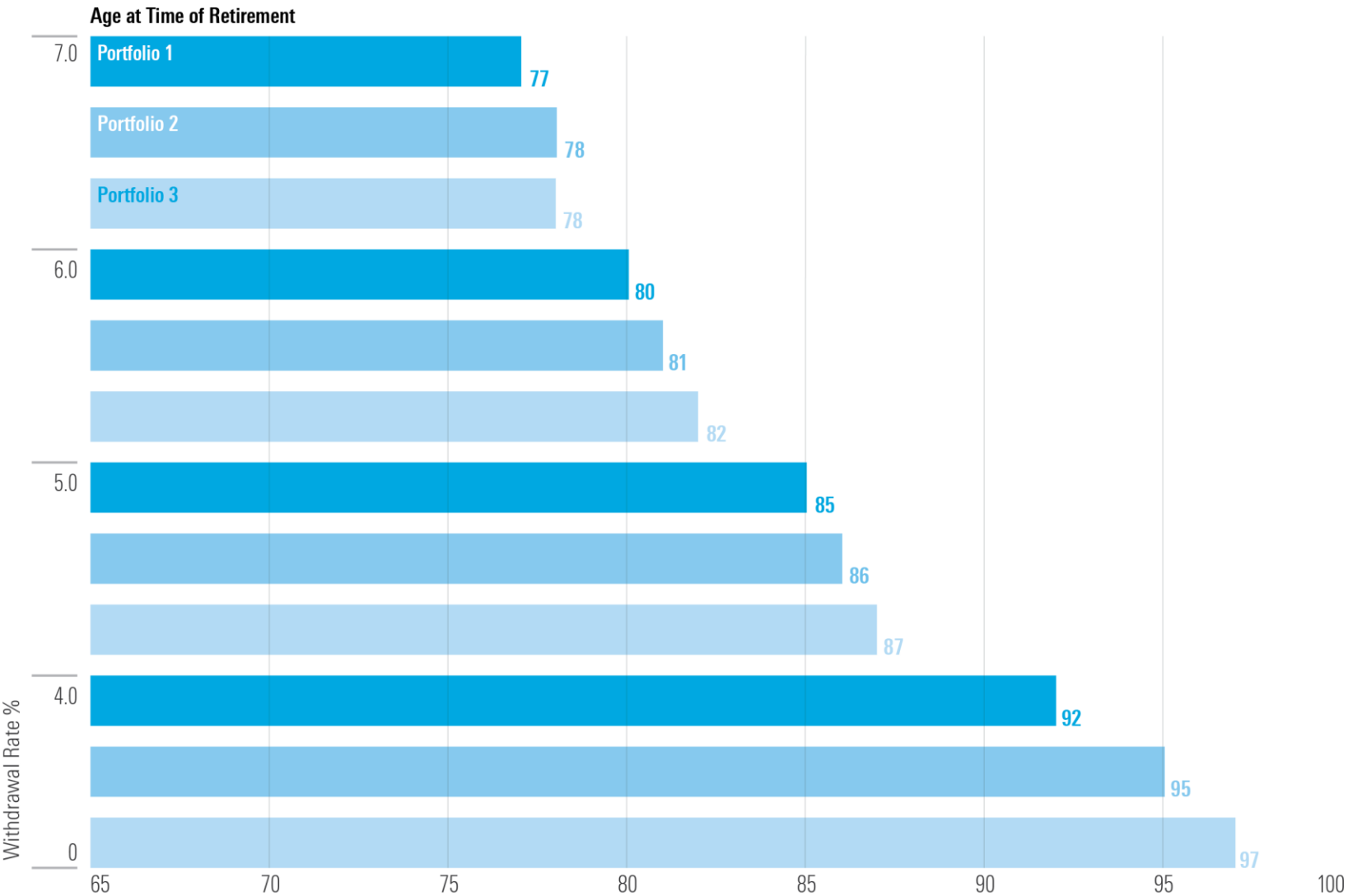
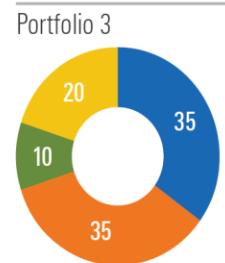
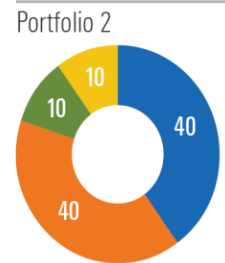
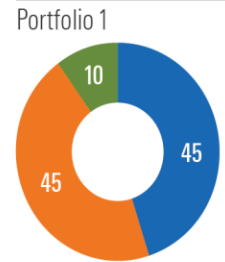


Retirement Portfolios

Age to which portfolio may last (90% confidence level)



Asset Allocation %



● Stocks
 ● Cash
 ● Bonds
 ● REITs

IMPORTANT: Projections generated by Morningstar regarding the likelihood of various investment outcomes using the Ibbotson Wealth Forecasting Engine are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Results may vary over time and with each simulation. This is for illustrative purposes only and not indicative of any investment. An investment cannot be made directly in an index. © Morningstar. All Rights Reserved.



Retirement Portfolios

The inclusion of REITs in a retirement portfolio may increase the age to which the portfolio may last. The image illustrates the estimated age to which portfolios (\$1,000,000 initial value) with various allocations to REITs may last given a withdrawal rate. Consider a scenario where an investor retiring at age 65 withdraws 4% of his or her initial portfolio amount each year. A portfolio consisting of 45% stocks, 45% bonds, and 10% cash would last until age 92. This number increases by three years for a portfolio comprised of 40% stocks, 40% bonds, 10% cash, and 10% REITs. Furthermore, the portfolio with a 20% allocation to REITs would last until the investor is 97 years old.

While including REITs may potentially improve the ability of a portfolio to support required withdrawals over a longer time period, it is also important to note that a higher rate of withdrawal would exhaust retirement savings sooner.

It is assumed that a person retires at 65 and withdraws an inflation-adjusted percentage of the initial portfolio wealth each year beginning at that age. The image was created using Monte-Carlo parametric simulation that estimates the range of possible outcomes based on a set of assumptions including arithmetic mean (return), standard deviation (risk), and correlation for a set of asset classes. The inputs used herein are hypothetical, based on historical long-term figures. The hypothetical risk and return of each asset class, cross-correlation, and annual average inflation follow. Stocks: risk 20.2%, return 12.1%; Bonds: risk 9.8%, return 5.9%; REITs: risk 18.4%, return 13.5%; Inflation: return 3.0%. Annual investment expenses assumed were 0.73% for stock mutual funds and REITs and 0.60% for bond mutual funds. Other investments not considered may have characteristics similar or superior to those being analyzed. The simulation is run 5,000 times, to give 5,000 possible 35-year scenarios. While simulation can produce results that show probabilities of an outcome, the analysis presented herein is at the 90% confidence level. A 90% confidence level indicates that there is a 90% chance of the outcome being as shown or better. Higher confidence levels are chosen in order to simulate tougher market conditions. A limitation of the simulation model is that it assumes a constant inflation-adjusted rate of withdrawal, which may not be representative of actual retirement income needs. This type of simulation also assumes that the distribution of returns is normal. Should actual returns not follow this pattern, results may vary.

Diversification does not eliminate the risk of experiencing investment losses. Government bonds and Treasury bills are guaranteed by the full faith and credit of the U.S. government as to the timely payment of principal and interest, while returns and principal invested in stocks are not guaranteed. Stocks have been more volatile than other asset classes.

Returns and principal invested in REITs are not guaranteed. REITs typically provide high dividends plus the potential for moderate, long-term capital appreciation. A REIT must distribute at least 90% of its taxable income to shareholders annually. Real estate investment options are subject to certain risks, such as risks associated with general and local economic conditions, interest rate fluctuation, credit risks, liquidity risks and corporate structure.

About the data

Stocks are represented by the Ibbotson® Large Company Stock Index. Bonds are represented by the 20-year U.S. government bond, cash by the 30-day U.S. Treasury bill, REITs by the FTSE NAREIT All Equity REIT Index®, and mutual fund expenses from Morningstar. An investment cannot be made directly in an index. The data assumes reinvestment of income and does not account for taxes or transaction costs.