PERSONAL CAPITAL®

Overview

Our Retirement Planner runs 5,000 Monte Carlo simulations to deliver a robust, personalized retirement projection. The simulations incorporate expected return and volatility, annual savings, income, spending goals, retirement spending, social security, and tax rules for taxable, tax-deferred, and tax-free investment accounts.

Retirement Planner assumptions updated as of 2/4/2019

Starting Portfolio

The Starting Portfolio amount represents how much you have saved so far. This can be synchronized with the accounts you've linked or entered manually.

The Starting Portfolio is divided into the following account types based on the proportions in your accounts. Cash accounts are considered taxable.

- Taxable
- Tax-Deferred
- Spouse Tax-Deferred
- Tax-Free
- Education

Accumulation Phase

The Accumulation Phase is the period from your current age until your retirement. For example, if you are currently 44 and plan to retire at 65, your Accumulation Phase lasts for 21 years. If you are already retired, there is no Accumulation Phase and the projection begins in the Distribution Phase (discussed in next section).

ANNUAL SAVINGS

The Annual Savings amount represents your expected annual net cash inflow until your retirement age. This can be estimated from your savings history of the accounts you've added, or entered manually. A yearly saving percentage increase above inflation can also be applied.

PORTFOLIO CASH FLOWS

The Retirement Planner allocates net cash **inflows** to account types in the following order (as applicable).

Education → Tax-Deferred* → Tax-Free* → Taxable

*Annual Contribution Limits:

- Tax-Deferred: $19,000 for single and $38,000 for joint, plus an additional $6,000 for each spouse over 50.
- Tax-Free: $6,000 if single salary is <$122,000 and $11,000 if joint salary <$193,000, plus an additional $1,000 for each spouse over 50.

The Retirement Planner allocates net cash **outflows** from account types in the following order:

Education (For educational expenses only) → Taxable (Assumes 7.5% Tax) → Tax-Free → Tax-Deferred (Assumes 20% Ordinary Income Tax)

Distribution Phase

The Distribution Phase is the period from your retirement age until your estimated life expectancy age.

RETIREMENT SPENDING

The Retirement Spending amount represents your expected annual net cash outflow from your retirement age through your life expectancy age. This can be estimated from the spending history of the accounts you have aggregated in the dashboard, or it can be entered manually. You can also apply a yearly spending percentage decrease after inflation which will start at the later of age 65 or the retirement year of both spouses.

Note: If married and your spouse retires before you, you can add a spending goal to offset your projected annual savings when your spouse retires until you retire. If your spouse retires after you, you can add a Work During Retirement income event to represent your spouse's income until your spouse retires.

The projected retirement spending ability represents the monthly spending amount that will drawdown your portfolio through life expectancy in the median retirement plan projection.

TAXES ON WITHDRAWALS

Your income (and spousal income), tax filing status, and state of residence are used to assess the income, capital gains, and dividend taxes according to the 2018 Federal and State tax tables. For State tax, we assume a flat tax rate and Federal standard deduction. See the flat State tax rate assumptions in the appendix.

Taxable	○ Withdrawals taxed at long-term capital gains rates with an assumed basis of 50% of the taxable portfolio at retirement ○ Each year, 2% of the taxable portfolio balance is paid out in dividends, taxed as qualified dividends
Tax-Deferred	Withdrawals taxed at ordinary income rates
Tax-Free	No taxes assessed

PORTFOLIO NET CASH OUTFLOWS

Portfolio net cash outflows – which are equal to retirement spending and taxes on withdrawals – are withdrawn from account types in the following order (as applicable):

Exception: If you are in the 12% marginal tax bracket or lower but will be in the 22% marginal tax bracket or higher with a portfolio withdrawal need greater than $10,000 in the future, the withdrawal order switches to include tax deferred withdrawals earlier on to fill the 12% tax bracket. The alternate withdrawal order is in place until all future expected tax deferred withdrawals at the higher tax rate have been withdrawn. Note: this does not cover all situations where it would be advantageous to draw from tax deferred accounts ahead of taxable in order to take advantage of a lower tax bracket, for example the logic does not cover if you are in the 22% marginal tax bracket now but will be in the 32% marginal tax bracket or higher in the future.

Income Events and Spending Goals

INCOME EVENTS

Income Events represent expected net cash inflows and include:

- Social Security
- Annuity Income
- Inheritance
- Pension Income
- Rental Income
- Sale of Property/Downsize
- Work During Retirement
- Other Income

Required Minimum Distributions (RMDs) are assessed from tax deferred accounts at age 70.5, according to the RMD table: https://www.irs.gov/pub/irs-tege/uniform_rmd_wksht.pdf

Net cash inflows during the distribution phase are allocated to the taxable account type.

TAXES ON INCOME EVENTS

Every income event can be designated as before tax or after tax except Social Security, which is always before tax.

Accumulation Phase	For before tax income events, the Tax Rate % assumption is applied.
Distribution Phase	For before tax income events, your income events, tax filing status, and state of residence are used to assess the income taxes according to the 2018 federal tax tables, plus a flat amount for state tax. For Social Security Income, 85% of the payments are taxed at ordinary income rates.

COST-OF-LIVING-ADJUSTMENT (COLA)

Every income event can be designated as cost-of-living adjusted with the following defaults:

Annuity Income	Fixed amount, not increased with inflation
Inheritance	Increased with inflation each year
Pension Income	Fixed amount, not increased with inflation
Rental Income	Increased with inflation each year
Sale of Property/Downsize	Increased with inflation each year
Work During Retirement	Increased with inflation each year
Other Income	Increased with inflation each year
Social Security	Increased with inflation each year

When an income event is inflation adjusted, the amount will increase with inflation each year, keeping your purchasing power the same over time. Some income sources such as annuities or pensions disbursed as fixed annual amounts, not adjusted for inflation, resulting in a decrease in purchasing power over time. The values in Retirement Planner are displayed in today's dollars so income events designated as fixed amounts will appear to decrease over time.

SPENDING GOALS

Spending Goals represent expected cash outflows and include the following:

- Charity/Gift
- Dependent Support
- Education (see Education Goals below for more detail)
- Health Care
- Home Purchase/Upgrade
- Renovation
- Vacation
- Vehicle
- Wedding
- Other Expense

EDUCATION GOALS

Education Goals are handled differently than other spending goals. The specified contribution amounts for education goals are taken from the Annual Savings amount. Any remaining shortfall is distributed as net cash outflows for the duration of the education goal. Any surplus value will be a net cash inflow to the taxable account type in the last year of the education goal.

Growth Assumptions

Your projected growth rate is determined by applying your total portfolio asset class weightings to the historical risk, return, and correlations of the following asset class index proxies:

Domestic equities	S&P 500 since 1926
International equities	MSCI EAFE since 1970 until 2000 and MSCI ACWI ex-US post 2000
US bonds	10-Year US Treasuries since 1926
International Bonds	10-Year Foreign Government Bonds since 1926
Cash	30-Day T-Bills since 1926
Alternatives	a hypothetical index of 50% real estate and a 50% gold/oil since 1970

The specific Historical Asset Class Risk/Return assumptions can be found here:
https://www.personalcapital.com/assets/whitepapers/Personal_Capital_Investment_Strategy.pdf

By account type:

Taxable	○ Accumulation Phase: Your aggregated investment account growth rate subject to tax drag of 20%, capped at a total performance impact of -0.8% and adjusted for inflation ○ Distribution Phase: Your aggregated investment account growth rate, adjusted for inflation ○ As of 1/30/2019, the cash account balance assumes a growth rate of Cash as listed above, rather than assuming the growth rate of the investment portfolio.
Tax-Deferred	Your aggregated investment account growth rate, adjusted for inflation
Tax-Free	Your aggregated investment account growth rate, adjusted for inflation

Education	6.5% growth rate, adjusted for inflation. This growth rate is generally more conservative than taxable because it's for a cash outflow in advance of retirement.

We assume 3.5% for inflation by default. We subtract 1% from performance to represent current market conditions, fees, trade costs, and behavioral mistakes.

Appendix

STATE TAX RATE ASSUMPTIONS

State	Tax Rates
Alabama	5.00%
Alaska	0.00%
Arizona	4.24%
Arkansas	6.90%
California	9.30%
Colorado	4.63%
Connecticut	5.50%
Delaware	6.60%
Florida	0.00%
Georgia	6.00%
Hawaii	8.25%
Idaho	7.40%
Illinois	3.75%
Indiana	3.30%
Iowa	8.98%
Kansas	4.60%
Kentucky	6.00%
Louisiana	6.00%
Maine	7.15%
Maryland	5.00%
Massachusetts	5.10%

Michigan	4.25%
Minnesota	7.85%
Mississippi	5.00%
Missouri	6.00%
Montana	6.90%
Nebraska	6.84%
Nevada	0.00%
New Hampshire	5.00%
New Jersey	6.37%
New Mexico	4.90%
New York	6.65%
North Carolina	5.75%
North Dakota	2.27%
Ohio	3.96%
Oklahoma	5.00%
Oregon	9.00%
Pennsylvania	3.07%
Rhode Island	4.75%
South Carolina	7.00%
South Dakota	0.00%
Tennessee	6.00%
Texas	0.00%
Utah	5.00%
Vermont	7.80%
Virginia	5.75%
Washington	0.00%
West Virginia	6.50%
Wisconsin	6.27%
Wyoming	0.00%
Washington, DC	8.50%