

Financial Benefits Maximizer: User's Guide



financial **Benefits**Maximizer



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Introduction to FBM

Welcome to Financial Benefits Maximizer or FBM for short! FBM attempts to simulate the impact of risk on your investments so you can get an idea of the likelihood of meeting your retirement goals. It also can help you get an idea of how various factors can impact that likelihood, such as Required Minimum Distributions, taxes, and other things you might be worried about. FBM is tailored to fit the needs of Federal employees. That means it can model future Federal pension annuities and the Thrift Savings Plan.

The User's Guide is divided into four main sections:

- **Introduction to FBM** – Provides some background to FBM and describes how to do some basic tasks
- **Inputs** – Describes the scenario inputs in detail and how to use them
- **Outputs** – Describes the scenario outputs in
- **For Financial Advisors** – Describes details of the calculations performed by FBM and assumptions

Why use FBM?

Preparing for retirement is a daunting task. It can be hard to pick up a calculator and a pencil and start doing math to see if you will be able to meet your retirement goals or even figure out what those should be in the first place. However, it is important to start confronting retirement before it's too late to change direction and the sooner the better. FBM can simplify that task and help you learn about preparing for retirement.

With an ordinary calculator, anyone can figure out how much money they should have saved by the time they retire using a few assumptions such as the average return you expect on your investments and then compare that value to how much you think you'll need during retirement. It is extremely important that you do consider how much you think you can save. However, it is very hard to account for risk with just a calculator. The higher the rate of return on an investment, the higher the risk is, so the higher you assume your annual rate of return is, the more important it is to account for risk.

FBM accounts for risk by creating at least 1,000 trials where a random rate of return for each investment fund or TSP fund is generated for each year from now until retirement and during retirement. For a person who is 40 years old now, plans to retire at age 65, and has a life expectancy of 85 years, the system will generate a number of random inputs equal to 1,000 times 45 times the number of investment and TSP funds included in the simulation. That's a lot of random inputs!

If you don't have savings accounts or investments set aside for retirement, but you have Federal pension, you can use FBM to see if your pensions will be able to replace enough of your income to meet your retirement goal or if you need to start setting aside some of your income now. FBM can also be

used as a tool to see how much you should set aside in order to maintain your standard of living throughout your lifetime.

Key Concepts

This section describes important concepts used in FBM.

Annual Retirement Income Goal

The Annual Retirement Income Goal you choose is what drives the success or failure of a scenario. Your Annual Retirement Income Goal is the amount of money you will need each year during retirement in order to maintain the standard of living you enjoy today. In order to meet your retirement income goal each year, you will need income sources from savings, pensions, or a combination of the two.

Your annual retirement income goal may change as your situation changes if you have a spouse. For example, if you retire but your spouse is still working, you will need some savings or income to replace your salary but not your spouse's. When you are both retired, you will need to replace both salaries.

Your Annual Retirement Income Goal should be calculated as the total of all living expenses you expect to have during your retirement with the exception of income taxes. The system calculates income tax in order to model various factors that can impact a retirement scenario. Expenses to include in your Annual Retirement Income Goal include the cost of food, clothing, living expenses, as well as travel and recreational expenses. FBM can help you estimate your Annual Retirement Income Goal. For some users, expenses may include other costs that need to be accounted for during retirement such as property tax. Rather than trying to account for and model every kind of expense you might face, FBM asks you to enter an average amount of income you will need to replace in retirement so that you can meet all your expenses.

Contributions

While you are working and earning a salary, it is expected that you will set aside some of your earnings towards your Thrift Savings Plan and other retirement savings accounts. For each of these accounts, FBM asks you to specify your contributions as a percentage of your salary. Entering a dollar amount is not allowed. The reason the system asks for a percentage is because if your salary changes over time, your contributions should change in line with your salary. As you earn more, you will need to save more in order to maintain your standard of living in retirement. If you earn less, you will not be able to realistically save as much. It is recommended that you adjust your contributions each year so that they increase or decrease proportionally with your salary.

Withdrawals

It is expected that once you retire, you will live off of withdrawals from your savings accounts. Rather than specifying how much you think you will need to withdraw, the system calculates how much you need to withdraw each year based on a variety of factors such as how much pension you receive for that year, how much you need to withdraw to meet Required Minimum Distributions (RMDs), and what your

income tax level is. If you have a spouse, your withdrawal amounts will also vary depending on when you are retired and when your spouse is retired.

Tax Policy on Retirement Savings Accounts

Tax deferred investments include the Thrift Savings Plan (TSP), 401ks, and other types of investments. No taxes are paid on contributions to tax deferred investments and contributions are subtracted from taxable income. Taxes are instead paid on withdrawals from tax deferred investments, and starting the year that you turn 70 ½, you will have to withdraw at least enough to meet Required Minimum Distributions (RMDs) set by the government.

Non-Tax deferred investments include all other investments. For all other investments, you make contributions using income after taxes. However, some retirement plans have some tax protection, such as Roth IRAs. If you have a Roth IRA, your contributions are taxed, but when you make withdrawals, you pay no more taxes. That means Roth IRAs are shielded from double income tax and capital gains tax. Other taxable investments will require you to pay capital gains tax when you make withdrawals.

FBM models the differences between tax-deferred, Roth IRAs, and fully taxable accounts so you can get an idea of how using those different accounts can influence the outcome of your retirement scenario. Note that your ability to invest in using these accounts depends on a variety of factors such as your income level and how close you are to retirement. FBM cannot account for all these factors, so it is wise to consult a professional financial advisor.

Required Minimum Distributions (RMDs)

Required Minimum Distributions are set by the government for tax-deferred investments. You must start making RMDs the year you turn 70 ½. FBM automatically enforces RMDs for accounts where you have specified the investment type to be one that is known to require RMDs. FBM assumes that that all tax-deferred investments will require RMDs when the owner turns 70 ½.

To calculate how much the RMD amount is for an investment, we take the balance of that investment and divide by the Distribution Period according to the age of the owner specified by the Uniform Lifetime Table. Documentation on RMDs and the Uniform Lifetime Table can be found on the IRS website (www.irs.gov).

Investment Types

For each investment other than the TSP that you enter into a scenario, FBM asks that you select the appropriate investment type. This is so that FBM can distinguish the varying tax policy and RMD status for each of your accounts. The investment types in FBM are:

- 401k, 408k, 403b – These are all tax deferred investments that have RMDs
- Roth IRAs – These are shielded from capital gains tax and double income tax
- Other IRAs – Tax deferred, have RMDs

- Keogh – Tax deferred, have RMDs
- SIMPLE IRA – Tax deferred, have RMDs
- Personal Savings – No shielding from taxes
- Other non-taxable – Behaves like a Roth IRA
- Other taxable – No shielding from taxes

Asset Classes and Fund Types

For each investment account you enter into a scenario other than your Thrift Savings Plan, you need to choose an Asset Class or specify your own. Asset Classes vary according to risk. There are six Asset Classes, which can be used to approximate a wide variety of investing strategies, plus you can customize your own Asset Class:

- Highest Risk – Mixture of high risk fund types composed of mostly high risk stock
- High Risk – Mixture of high risk fund types composed of mostly stock
- Medium Risk – Balanced mix of stock and bonds
- Low Risk – Mixture of low risk fund types composed of mostly bonds
- Lowest Risk – Mixture of low risk fund types composed of mostly low risk bonds
- Cash – Select this for savings accounts; typically keeps up with inflation
- *You can also create your own custom mix*

Each Asset Class is composed of six Asset Types. When you customize your own Asset Class, you pick an allocation between the six Asset Types. The six Asset Classes, which are based on the TSP funds, model aspects of the stock and bond markets as well as U.S. treasury bonds to get a wide picture of different investment strategies. The Asset Types are:

- Cash – Based on 30 day Treasury notes, used to approximate savings accounts or CDs
- U.S. Treasury Bonds – Based on the TSP G-Fund
- Government, corporate and mortgage based bonds – Based on the TSP F-Fund
- Mid and Large Capitalization Stock – Based on the TSP C-Fund
- Small Capitalization Stock – Based on the TSP S-Fund
- International Stock from developed countries – Based on the TSP I-Fund

The Asset Types for non-TSP investments are assumed to have slightly smaller returns (0.5% less) than the TSP funds because they typically charge more overhead.

Simulation Results

It is too time consuming and complex to attempt to calculate how all the different factors and variables that could impact the outcome of a retirement scenario. FBM simulates 1,000 different outcomes using randomly generated rates of return for the Asset Classes, Asset Types, and TSP funds which FBM models. The returns are randomly generated using information about how those funds performed in

the past. By considering the percent of those 1,000 outcomes that were successful, you can get an idea of how risky your retirement plan is. The goal of FBM is to produce 1,000 outcomes can account for more variation than manually trying to create a best case, worst case, and medium case on paper using traditional methods.

Inputs

This section describes the details of actually creating a scenario. It is organized by screen in FBM. To access any of these screens, click the name of the screen you wish to view on the navigation pane on the left side.

Scenario Setup

The scenario setup screen is where you give your scenario a name, specify your retirement goal, and indicate whether or not you want to include your spouse, if applicable.

Required Fields

The following fields are required under most circumstances.

Include Spouse

This field is labeled, 'Do you wish to include your spouse in this scenario?' and requires a 'yes' or 'no' answer. If you have a spouse, it is recommended that you include information about your spouse in your scenario. While you might have enough pensions and savings to maintain your living standards throughout your retirement, it would be hard to consider an outcome successful where your spouse does not also have enough. However, you may choose to enter only your own information to start with.

Is Your Spouse a Federal Employee

This question is required if you choose to include your spouse in the scenario. If you have not selected 'yes' to include your spouse, this field will be grayed out. If your spouse is a Federal employee, you will be able to enter information about his or her TSP and do a basic estimate of Federal annuities, if either is applicable.

Annual Retirement Income Goal

This field is labeled as, 'What is your Annual Retirement Income Goal'. Your annual retirement income goal is the amount of income you think you will need each year in retirement in order to maintain your current standard of living or meet whatever standard of living you deem appropriate or want to see the outcome for. In order to meet your retirement income goal each year, you will need income sources from savings, pensions, or a combination of the two.

There are two ways to determine your annual retirement income goal:

1. **Enter a Percentage** – Let the system calculate a dollar amount based on the percentage of your salary you wish to replace in retirement. It is recommended you use plan to replace at least 75% of your income in the year before you retire. Typically you need less than 100% because you will likely pay less in taxes and you will no longer be saving for retirement. If you have difficulty estimating your expenses in retirement, entering a percentage may be easier.

If You Include Your Spouse – The dollar amount for your annual retirement income goal will be calculated as based on the entered percent using the combined salaries of you one year before you retire and your spouse one year before he or she retires. If you or your spouse retires before the other, the retirement goal for the retired spouse is calculated based on the last salary for the retired spouse only. If there will be a surviving spouse, the retirement goal will be adjusted for the surviving spouse, when it is applicable, according to the entered percentage and that spouse's last salary before retirement.

2. **Enter a Dollar Amount** – If you have a good idea of how much income you will need in retirement, you can enter the exact dollar amount. The system will calculate the percentage of your income you are planning to replace according to this amount. If it is much higher or lower than 75%, you may want to reevaluate your estimate.

If You Include Your Spouse – You will need to specify an exact dollar amount as the annual retirement income goal to be used for a surviving spouse, if applicable. If you or your spouse lives longer than the other, the retirement goal for the surviving spouse should be less than what it should be when you and your spouse are both retired. It is important to make sure to plan ahead for a surviving spouse. This amount should be viewed as the amount of money required to maintain the living standards that you and your spouse enjoy today, but if only one of you needed an income. This might be calculated based on the amount you will likely spend on rent, mortgage, or property taxes in retirement plus food and entertainment costs for one spouse. It might not be much lower than the retirement income goal for you and your spouse combined.

Optional Fields for Special Situations

The following fields are not required but may be useful in special circumstances. Access these fields by clicking on the 'Show Optional Questions' button or link.

Estate

This question is labeled, 'What estate do you wish to leave behind?' You may be interested in saving more than enough to meet your own retirement income goal so that you can leave an inheritance for your children, loved ones, or a charitable donation. If that is the case, you can specify the desired estate you wish to leave behind as a dollar amount.

When you run the simulation for the scenario in FBM, the probability of success will be determined based on the number of trials where FBM calculates that you are able to leave behind the desired estate.

Inflation

This question is labeled, 'What level of inflation do you want to assume?' This should be entered as a percent. The system will show the default level of inflation unless you change it.

FBM does all calculations using 'current dollars', which are dollars which have the value of money today. Over time, inflation could make \$1 in the future worth less than \$1 today. The inflation is important because it could be taking a toll on your salary or your pensions that don't have full Cost of Living Adjustments (COLA). FBM will devalue your future earnings and pensions according to COLAs and inflation.

For example, if you typically receive a 3% raise each year, but inflation is also 2.6%, the net effect is that your salary isn't really increasing. Another example is the FERS pension, which has COLAs, but they do not fully protect against inflation. If inflation is high enough, it could start wearing down on your FERS pension, which is a scenario FERS pension holders should consider.

Capital Gains Tax

This question is labeled, 'What capital gains tax do you want to assume?' This should be entered as a percent. The system will show the default level of inflation unless you change it.

Capital gains tax is a tax you must pay on profit you earn from your investments. Many retirement plans, including the Thrift Savings Plan, 401ks, and IRAs, are exempt from capital gains tax, so most people do not need to worry about capital gains tax if they have these types of accounts. Also, capital gains tax does not apply to government issued bonds and other instruments. However, if you have a stock portfolio or another type of investment that is not shielded within a capital gains tax-exempt plan, you should account for this tax on your returns. FBM assumes that capital gains tax only applies to stock funds (common stock, small cap stock, and international stock) that you have through investment types, 'Personal' or 'Taxable'.

To calculate capital gains tax as precisely as required when you actually file your taxes will require a lot of information about when you bought each fund, for how much, and how much that fund was worth when you sold it. This calculation is usually performed by your broker. For example, if you have purchased stock through a broker, and asked your broker to sell some of your stock, the broker would probably calculate your total capital gains for you. Rather than asking to enter detailed information about the history of your stock portfolio, FBM asks you to assume that some percentage of your withdrawals will go to capital gains tax. Use the capital gains tax field to test different scenarios so you can learn about how capital gains tax might impact your retirement plan.

If capital gains tax applies to you, a good strategy would be to start with a low capital gains tax rate and make adjustments to your scenario until you obtain a satisfactory outcome in the Simulation Results. Then adjust the capital gains tax upwards until the outcome is negatively impacted enough that you might need to change your strategy. Then ask yourself, 'is this capital gains tax rate a reasonable assumption?' For example, 40% would probably be unreasonable to assume, so if capital gains tax does not negatively affect your scenario up to 40%, your retirement plan is likely robust enough to be considered a good plan. A financial advisor can help you answer this question.

Career and Personal Information

The Career and Personal Information screen is where you enter your current salary, date of birth, retirement age, life expectancy, and any income you expect to earn in retirement. If you choose to include your spouse, if applicable, you need to enter the same information for your spouse

Required Fields

The following fields are required.

Current Annual Salary

Enter your total annual salary while employed by the Federal government (or other employer for your spouse if he or she is not a Federal employee). If you are paid on an hourly basis, you will need to convert that to a total annual amount.

Annual contributions to your Thrift Savings Plan, savings accounts, and any other investments you might have are calculated as a percent of your annual salary. As your salary increases, your contributions should also increase. Income other than your salary (for example, if you own rental property) should not be included in this field, unless you want to use it to calculate your contributions.

Date of Birth

Enter your date of birth. The system accepts a variety of formats, including MM/DD/YYYY. The system will convert the date you enter to that format or alert you that it cannot understand the date you entered.

FBM requires your date of birth instead of just your age in order to accurately calculate when you will be required to make Minimum Required Distributions, if applicable, to your TSP, 401k, Traditional IRA, and other investment types.

Current Age

This field is non-editable. It is calculated based on your date of birth.

Life Expectancy Age

Your life expectancy age tells the system what age the system should use in figuring out how long you will live. No one can predict life expectancy, so it is a good idea to create multiple scenarios to account for different lengths of time you might be retired for.

Retirement Age

Your retirement age is one of the most important factors that determine the outcome of a retirement scenario. Your retirement age influences how long you will be retired, how long you are saving for retirement, and how much your pensions are worth. If you retire too early, you might not have enough savings to maintain your current living standards throughout your lifetime. On the other hand, early retirement might be available to you.

Annual Work Income during Retirement

After retiring from the Federal government, you may choose to continue working elsewhere. Maybe you might work a few hours a week as a clerk or you might become a government consultant. This field allows you to incorporate those plans into your FBM scenarios. Note that you should not include pension annuities, or withdrawals from savings in this field, but do include all other sources of income.

Number of Work Years during Retirement

If you plan to work during retirement, you need to specify the number of years you will continue to work.

Optional Fields for Special Situations

The following fields are not required but may be useful in special circumstances. Access these fields by clicking on the 'Show Optional Questions' button or link.

Typical Annual Salary Percent Increase

If you think your salary will increase or decrease in the future, you can use this field to control the annual percent increase or decrease. By default, FBM assumes that your salary will increase with inflation. If you have been consistently getting approximately a 5% raise each year, you should enter 5% in this field. You can change the percentage to zero so that FBM projects your future salary are decreasing with inflation, or to a percentage in between zero and inflation so that FBM projects it as decreasing, but not as much as inflation.

Other Income

If you earn income that you pay taxes on other than your salary which you do not want to be used to calculate your savings contributions, you can enter that amount here. Note that your salary plus the number you enter for other income will be used to calculate your income taxes. Income taxes can

reduce the amount of money you have available for contributions. FBM calculates your contributions as a percentage of your salary. Other income may increase your income tax rate.

Annual % Increase in Work Income (for Annual Work Income during Retirement)

Like your salary, your income in retirement may change over time. This field is set to the same value as inflation by default. Change this field if you think your income in retirement will change over time.

Estimated Average Income Tax Deduction

FBM calculates income taxes for the years you are still working to account for retirement plans such as Roth IRAs where you pay taxes on your contributions when you make them. This reduces the total amount that you contribute to these types of investments.

To calculate income tax, FBM uses the standard deduction for single filers if you do not include your spouse and the standard deduction for joint couples if you do choose to include your spouse (if applicable). If you know that you typically take a non-standard deduction, you should enter that amount here.

If you choose to include your spouse, if applicable, this deduction amount will override the standard deduction for the years you are working. It does not account for a difference between when you retire and when your spouse retires. FBM will use this deduction amount for every year up to the year you retire.

Post-Retirement Income Tax Deduction

FBM calculates income taxes for the years you are retired because income tax will lower the amount of money available to you from your withdrawals for accounts that are subject to income tax. Withdrawals are subject to income tax if they come from 401ks, traditional IRAs, and other types of accounts. If you need to pay income taxes on a withdrawal, you will need to increase the size of the withdrawal so that after taxes you are still able to meet your annual retirement income goal and maintain your standard of living.

To calculate income tax, FBM uses the standard deduction for single filers if you do not include your spouse and the standard deduction for joint couples if you do choose to include your spouse (if applicable). If you are your spouse, if applicable, is over 65, FBM includes that deduction as well. If you think that you will probably take a non-standard deduction during your retirement, you should enter that amount here.

If you choose to include your spouse, if applicable, this deduction amount will override the standard deduction for the years that you are retired. It does not account for a difference between when you retire and when your spouse retires, or a difference in life expectancy. FBM will use this as your deduction amount for every year after you retire.

Non-TSP Investments

If you have savings accounts you plan to live off of in your retirement, you should enter them here. Do not attempt to enter information about all your assets. Instead, try to think about your savings that is set aside specifically for retirement.

Required Fields

The following fields are required for each investment account. You may add or remove investment accounts as needed.

Account Name

You must give a unique name for each retirement savings account. The account name will be how you identify each account in FBM's outputs. You should choose a short, but meaningful name.

Investment Type

The investment type you select determines whether or not FBM enforces RMDs and how taxes are calculated and applied to your contributions and withdrawals.

Balance

Enter your current account balance.

Annual Contribution as a Percent of Salary

Enter your future contributions to this account as a percent of your salary. You should think about your contributions as a percent of your salary rather than a fixed dollar amount because as your salary changes, your contributions should change accordingly.

Starting Asset Class

The Asset Class you choose depends on your risk level. Click on the 'Info' link for more details about Asset Classes. Each year, FBM assumes you will contribute to this account according to this asset allocation.

Optional Fields

The following fields are not required but may be useful to you.

Ending Asset Class

A good investment strategy is to start off with risky investments early in your career and slowly re-allocate your investments over time to become less and less risky. Select an ending Asset Class to reallocate towards in order to see how this can impact your scenario outcome. If you select the same Asset Class to start and end with, FBM will assume you plan to re-balance this account every year so that it matches the asset allocation for the selected Asset Class. If you don't re-allocate your funds on a regular basis, their allocation may change over time, even if you are contributing to them the same way every year. The reason for this is that different asset types grow at different rates.

Asset Class Details

Click on the link or button labeled 'Show Details' or select 'Customize...' from the Asset Class select box to access this feature. When you do so, you can see the asset type allocation for the selected Asset Class. You can adjust the allocation as you see fit so that you can experiment with different allocations or more closely match the allocation of your accounts. Be sure that the allocation percents total to 100%.

Thrift Savings Plan

If you have a Thrift Savings Plan (TSP), you can specify what percent of your salary you contribute to it and what your allocation for the TSP funds is. If your spouse is a Federal employee who contributes to or has a TSP, you can also enter information about his or her TSP here.

Required Fields

The fields on this page may or may not be required based on your situation:

- If you don't have a TSP, leave the form blank
- Any blanks are interpreted as zeros
- If you have a TSP but are no longer contributing and do not plan to contribute to it, you do not need to enter a total contribution or future allocation percents for the funds
- If you are contributing, you need to enter the total contribution and future allocation percents. The future allocation percents must total to 100%.

Total Contribution

Enter the percent of your salary that you plan to contribute to your TSP. You should think about your TSP contribution as a percent of your salary because as your salary changes, your contributions should also change.

TSP Fund Balances

For each fund, enter your current balance. You may leave fields blank where the amount is zero.

TSP Fund Future Allocation Percent

For each fund, enter how much of your future TSP contributions should be allocated towards that fund. The future allocation percents must total to 100%. Blank fields are interpreted as zeros.

Expected Pension Annuities

If you are in CSRS or FERS, you can include your Federal annuities as well as any other annuities or pensions in this section.

Required Fields

The following fields are required for each pension or expected annuity. You may add or remove pensions/annuities as needed.

Pension Type

You must select the pension type for each pension/annuity. The pension type determines the type of Cost of Living Adjustment (COLA) you receive for each annuity. Some pension types, such as the FERS Supplement, have additional rules such as when they start and stop.

Annual Amount

The annual amount is the total amount you expect to receive in the first year. If you ask for an estimate from your HR Office, ask that the estimate be based on today's dollars (i.e., do not account for inflation—FBM will automatically account for inflation).

Age to Receive Benefit

Enter what your age will be when you receive your first payment.

Optional Fields

The following fields are not required but may be useful to you.

Notes

This field is useful if you have several annuities which fall into the 'other' category for Pension Type. The Notes field allows you to label each annuity or add additional notes.

Summary of Inputs

The Summary screen is the bridge between the inputs and outputs in FBM. You must confirm the information on the summary screen before you can go to the outputs by clicking on the button or link, 'Go to Outputs'. If you make a change to one of your inputs, you will need to confirm the summary screen again before proceeding to the outputs.

Summary Information

The following information is displayed on the summary screen. If you include your spouse, if applicable, this information will be listed for both you and your spouse (unless stated otherwise).

- Retirement Goal – this lists your annual retirement income goal as a dollar amount and as a percentage of your income one year prior to retirement. If you include your spouse, your retirement goal is for you and your spouse, so it is only listed once.
- Retirement Age – the age you plan to retire
- Life Expectancy – the age you reach life expectancy to be used in the calculations
- Current Salary

- Retirement Salary
- Current Savings for Retirement – total of all balances for your retirement savings accounts and TSP
- Total Contributions to Retirement Savings – total percent of your salary that you plan to contribute to your savings accounts and TSP

Investment Allocation Pie Chart

This is an animated graphic that shows how your asset allocation changes over time. For example, if you are contributing to an L fund in the TSP, your allocation will change over time as the L fund changes. The pie chart reflects the asset allocation of all your retirement savings accounts and TSP combined.

- Press '>' to play the animation
- Press '<<' to jump to the previous year
- Press '>>' to jump to the next year
- Select any year from the select box to jump to a particular year

Optional Details – Draw Down Order

To modify the investment draw down order, click on the button or link labeled 'Show Details' at the bottom of the page. The draw down order is the preferred order to make withdraw from your investments and, if applicable, your spouse's investments. When FBM creates the simulation for your scenario, it will determine what withdrawals need to be made other than RMDs then make them in the order of the draw down order show here. When the balance of the first account in the list reaches zero, it moves on to the next one and so forth.

The system automatically determines a suitable draw down order based on the investment type. For example, FBM automatically moves tax-deferred plans to the bottom of the list. You can change the draw down order to see how the order might impact the results or test a particular draw down strategy.

Results

To access the results, you need to go to the Summary screen and then click on the button labeled, 'Go to Outputs'. The main output of FBM is the estimated percent chance that your retirement scenario will be successful. A successful outcome means that you were able to meet your annual retirement income goal each year in the simulation.

Income and Withdrawals

This output screen summarizes your income, pensions, and expected withdrawals you will need to make in order to meet your annual retirement income goal. This screen shows the basic outline of your retirement plan. It does account for any risk in your investment strategy.

The following information is listed:

- Income – This is your projected income over the years. If applicable, your spouse’s projected income is added in.
- Contributions – This lists the total amount you plan to contribute to your retirement savings accounts each year based on your projected salary. If applicable, your spouse’s projected contributions are added in.
- Pensions – The total of all your pension annuities, other than social security. If applicable, your spouse’s pensions are added in.
- Social Security – Your projected social security annual amount. If applicable, your spouse’s social security is added in.
- Withdrawals to meet Annual Retirement Income Goal – This is basically the income in retirement that you need to replace with your savings—the total withdrawal amount you will need to make each year in order to meet your retirement goal. It is calculated based on your pension amounts and post-retirement work income. It does not account for taxes or RMDs, which could cause your actual withdrawal amounts to be greater. If applicable, it is calculated using your spouse’s income, pensions, and savings accounts as well.

Simulation Results

The most powerful feature of FBM is the simulation. FBM creates 1,000 different outcomes using your inputs. The outcomes are calculated to randomly vary according to historical information about the asset types that FBM models. The goal is to generate 1,000 reasonably likely outcomes so that you can better understand the range of possibilities, and in particular, a *likely* range of possibilities. Most of those outcomes will be centered around the expected outcome. If all variables behave normally, you will leave behind that expected amount of money at the end of your life. However, a robust retirement plan must consider other likely outcomes and not just the middle outcome. The most important information to consider is the estimated probability, or percent chance, that you will be able to meet your retirement goal.

Probability of Meeting your Retirement Goal

The probability of meeting your retirement goal is estimated by calculating the percent out of 1,000 trials in the simulation where your savings did not reach zero dollars, or if you specified an estate goal, where your savings did not fall below that value. This estimated probability is the strongest, most significant number that FBM can calculate. If out of 1,000 reasonably likely outcomes, 90% were successful, then your retirement plan is likely to be very robust. If instead only 50% were successful, your retirement plan is probably more risky than it should be and you may need to change your strategy by increasing your contributions or delaying retirement. It is strongly suggested that you seek guidance from a financial counselor in addition to running scenarios in FBM.

Total Savings Graph

This graph is a summary view of the simulations results. This graph shows the most likely total savings you might have at each year up to your life expectancy, plus a shaded area of fairly likely outcomes. It does not show all possible outcomes, but instead shows the half of the outcomes that are more likely than the rest. This graph can give you a sense of how wide the range of likely outcomes is. A robust retirement scenario would not show the shaded part dipping down to zero at any point in the graph.

Probability of Outcomes

This graph is a summary view of the simulations results. This graph is a histogram, or frequency graph. It shows possible remaining savings on the horizontal axis and the frequency, or probability, on the vertical axis. As you look farther to the right on the horizontal axis, the dollar amounts increase, but the vertical values, the frequencies, should be decreasing. The reason for this is because while it is possible that your investments will dramatically increase in value, it is not very likely. The more drastic the increase, the less likely it is. The same is true of the far left. Drastic decreases are increasingly less likely, the more drastic they are. The remaining savings with the highest frequency should be somewhere in the middle, and this is the most important area. If the amounts with the highest frequencies are positive amounts, the chance of meeting your retirement goal is high. If they are negative, the chance of meeting your retirement goal is very low. If they are centered near zero, there is still a good chance you will not meet your retirement goal.

Detailed Simulation Results

Simulation Results by Plan Graph

This graph is a summary view of the simulations results. This graph shows the most likely total savings you might have in each retirement savings plan at each year up to your life expectancy, plus a shaded area of fairly likely outcomes for each account. It does not show all possible outcomes, but instead shows the half of the outcomes that are more likely than the rest. This graph can give you a sense of your money is likely to be distributed between your plans over time. It is difficult to use this graph to predict the success or failure of your retirement scenario using this graph, but it can be instead used to get a sense of what might be contributing to good results or bad results when viewed alongside the other FBM outputs.

Estimated Required Minimum Distributions Graph

This graph shows the expected Required Minimum Distributions you will have to make on your TSP, 401k or other tax-deferred accounts, if you have them. The purpose of this graph is to show you how RMDs play a role in retirement. You can see the year that RMDs start and where they come from. You can compare your expected RMDs with your expected withdrawal amounts. If your RMDs are much larger than your expected withdrawals, you may want to come up with a plan for what you want to do

with the extra cash you will pull out of your retirement savings accounts that you won't need to meet your expenses, according to your annual retirement income goal. FBM assumes that these extra withdrawals would be kept in a savings account until you need them. However, you might want to invest them or simply spend them on entertainment or enjoying life. Note that this graph is created using expected results, and is not based on the outcomes from the simulation.

Income Tax Graph

This graph can teach you about income taxes in retirement. This graph shows your expected income taxes over time. When you are still working, you will pay income tax on your salary. When you retire, depending on the types of retirement savings plans you have and how much income you will receive from pension annuities, you may pay very little in income tax or a relatively large amount in income taxes. Note that this graph is created using expected results, and is not based on the outcomes from the simulation.

For Financial Advisors or Advanced Users

Inflation and Projecting Future Value of Assets

FBM models the effects of inflation on pension annuities and when projecting salary. All FBM projections are calculated in terms of current dollars, so all outputs should be interpreted in terms of the value of money today. FBM does not attempt to project the actual dollar amounts of future assets.

Asset Types and Asset Classes – Expected Rate of Return and Risk

FBM simulations are based on randomly generating rates of return using the following five Asset Classes composed of six Asset Types as described below. The figures below for average return and risk are based on historical data (30 years) for the TSP Funds: G, F, C, S, and I. The historical data was adjusted for inflation using the Consumer Price Index (CPI). The data in the table below is assumed to show the expected rate of return and expected risk for each Asset Type and Asset Class.

Asset Class	Asset Type					Average Return	Risk (std. dev.)
	G Fund (U.S. Treasury Securities)	F Fund (U.S. Bond Market)	C Fund (Large & Mid Cap Stock)	S Fund (Small Cap Stock)	I Fund (Intl. Stock)		
Lowest Risk	74%	6%	12%	3%	5%	7.6%	4.3%
Low Risk	43%	7%	27%	8%	15%	9.2%	9.1%
Medium Risk	27%	8%	34%	12%	19%	10.0%	11.6%
High Risk	16%	9%	38%	16%	21%	10.5%	13.4%
Highest Risk	5%	10%	42%	18%	25%	11.0%	15.1%
Average Return	6.5%	7.1%	12.4%	12.3%	9.7%		

Risk (std. dev.)	1.6%	5.2%	16.2%	19.1%	18.1%
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Correlation Matrix

Bonds and stocks are related according to general economic conditions. The following chart shows the 30 year historical correlations between each asset type FBM models. These correlations were calculated using data adjusted for inflation according to the CPI. FBM's Monte Carlo simulation feature models the correlations listed in this table. The correlations listed are assumed to be the expected correlations.

	Cash	G-Fund	F-Fund	C-Fund	S-Fund	I-Fund
Cash	1	0.87575	0.58318	0.24090	0.03295	0.11096
G-Fund		1	0.68147	0.20118	0.07413	0.13844
F-Fund			1	0.25656	0.12107	0.08213
C-Fund				1	0.86491	0.65015
S-Fund					1	0.59998
I-Fund						1

Risk Simulation

FBM simulates risk by creating 1,000 trials per simulation using randomly generated rates of return. This is called Monte Carlo simulation. When generating random rates of return, FBM makes the following assumptions:

- Over many simulations, the mean rate of return for an investment account composed of any given asset type should be equal to the given expected rate of return for that asset type
- Over many simulations, the variance in return for an investment account composed of any given asset type should be equal to the given expected variance in return for that asset type
- Over many simulations, the correlation in return for any two given asset types should be equal to the expected correlation for those two assets
- The expected distribution of each asset type is normal or close enough to normal that it is appropriate to use a normal distribution when randomly generating a return
- Two investment accounts with the same asset allocation should have the same rate of return
- Two investment accounts with the similar asset allocations should be correlated according to the strength of their similarity
- TSP funds are assumed to have slightly higher returns (0.5% less) than non-TSP investments because they typically have less overhead

Treatment of Taxes

FBM is not a tax estimation software tool, but it does estimate income tax and capital gains tax. The purpose of calculating income tax and capital gains tax is to differentiate between retirement savings investment types with varying tax policies. FBM uses the standard deduction for a single or standard deduction for a joint filing couple and then calculates the taxable income in order to determine the income tax bracket. The effective income tax rate is calculated in the standard way, just as it is for real tax returns. The tax brackets are to be defined and maintained by FBM administrators so that they kept up to date with the tax brackets used by the U.S. government. Capital gains tax is estimated for appropriate investment types and asset types by assuming that a set percent of withdrawals from that asset will go to capital gains tax. This set percent can be defaulted to an amount set by FBM administrators or the user may override it. FBM does not account for special tax situations or any other type of taxes.

Required Minimum Distributions

FBM assumes that that all tax-deferred investments will require RMDs when the owner turns 70 ½. To calculate how much the RMD amount is for an investment, we take the balance of that investment and divide by the Distribution Period according to the age of the owner specified by the Uniform Lifetime Table. Documentation on RMDs and the Uniform Lifetime Table can be found on the IRS website (www.irs.gov). FBM does not account for any other special rules or policies used to calculate RMDs.

Investment Types

FBM models the differences between tax-deferred, Roth IRAs, and fully taxable investment types in terms of when income taxes are applied and whether or not to enforce RMDs. However, it does not account for the user's ability to invest in using these accounts, which may depend on a variety of factors such as your income level and years to retirement.

FBM accounts for the limits set by the IRS on how much as user may contribute to any given type of investment. If the user's contribution strategy results in exceeding the limits set by the IRS, FBM calculates how much money is in excess of the limit and assumes the user would keep the excess in a savings account, labeled 'Excess Contributions (Savings Account)'. FBM enforces the following limits:

Investment Type	Contribution Limits
401k/408k/403b Roth 401k TSP	<ul style="list-style-type: none">• If less than 50 years of age, limit is \$16,500• If 50 years of age or more, limit is \$22,000• Total of all 401ks, Roth 401ks, and TSP for one individual cannot exceed the above limits
IRA Roth IRA	<ul style="list-style-type: none">• If less than 50 years of age, limit is \$5,000• If 50 years of age or more, limit is \$6,000• Total of all IRAs and Roth IRAs for one individual cannot exceed above limits• Roth IRAs cannot exceed MAGI limits (for single, \$105,000 to phase out at \$120,000; for joint couples, \$166,000 to phase out at \$176,000)

SIMPLE IRA	<ul style="list-style-type: none"> • If less than 50 years of age, limit is \$11,500 • If 50 years of age or more, limit is \$14,000
Keogh	<ul style="list-style-type: none"> • Limit is \$46,000

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